

Application/Control Number: 95/000,122

Page 83

Art Unit: 3993

Ground 24: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner agrees with the proposed rejection of the Third Party Requester, and the rejection of claim 4 under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Molitor '637 is maintained.. For the response see "Ground 4: Examiner's Response to the Argument and Comments," *supra*.

**Proposed Third Party Requester Rejection: Ground #25.**

The requester submits on pages 44-46 in the request that claim 4 is unpatentable under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Wu.

Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt mentioning Molitor '637 in view of Wu, as evidenced by Exhibit C.

Claim 4 depends from claim 1 and further limits the outer layer material to a polyurethane based material. As reported in the Decision of 04-06-06 granting reexamination, it needs to be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane materials, which are non-ionomeric thermoset materials, for the use as an outer layer.

As pointed out in the request on page 44:

Wu teaches that: The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become accustomed to with balata. "Click" is the sound when the ball is hit by a golf club and "feel" is the overall sensation imparted to the golfer when the ball is hit. It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the "click" and "feel" of balata. (Wu at col. 1, lines 36-46.)

Application/Control Number: 95/000,122

Page 84

Art Unit: 3993

As pointed out in the request on page 45:

Moreover, as recognized by the inventor himself, the particular materials used in the golf balls were not as important as the mechanical properties of those layers. (See Exhibit G at 334.) The Surlyn® 1855 (now Surlyn® 9020) taught in Nesbitt's primary example has a Shore D hardness of 55 and a flexural modulus of about 14,000 psi. Wu's polyurethane material has a Shore D hardness of 58 as measured on the surface of the golf ball. (Exhibit C (showing that the polyurethane material used as the outer cover layer on the Titleist Professional™ golf ball has a Shore D hardness of 58); see also Decl. of Jeffrey L. Dalton at ¶ 6.) In addition to being soft, Wu's polyurethane is a relatively low flexural modulus material. For example, this material has a flexural modulus of about 23,000 psi as tested in accordance with ASTM standards. (Decl. of Jeffrey L. Dalton at ¶ 7.) This is very similar to the hardness of the Surlyn® 1855 used in one example taught by Nesbitt.

Therefore, the request on pages 44, 45 and concludes:

it would have been obvious to modify the golf ball disclosed in Nesbitt to include an outer cover made of Wu's soft polyurethane material because it would exhibit an improved cut resistance over Surlyn or balata cover layers while providing a golf ball having the "click" and "feel" of a balata-covered ball; .... those skilled in the art would have been led to substitute the polyurethane of Wu for the soft ionomer cover layer of Nesbitt because such would give the same or improved playability properties and would improve durability properties; and .... it would have been obvious to modify the golf ball of Nesbitt to include an outer cover layer using the polyurethane disclosed by Wu because it provides a golf ball having a good "click" and "feel" and exhibits improved shear resistance and cut resistance when compared to balata-covered balls.

This rejection of claim 4 based on Nesbitt in view of Wu was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Ground 25: Patent Owner's Argument received 30 April 2007

The Patent Owner does not specifically argue this rejection. The argument is that given at "Ground 5: Patent Owner's Argument," *supra*.

Application/Control Number: 95/000,122

Page 85

Art Unit: 3993

Ground 25: Third Party Requester's Comments received 30 May 2007

The Third Party Requester's counter arguments for this claim are the same as given *supra* at "Ground 5: Third Party Requester's Comments."

Ground 25: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner agrees with the proposed rejection of the Third Party Requester, and the rejection of claim 4 under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Wu is maintained.. For the response see "Ground 5: Examiner's Response to the Argument and Comments," *supra*.

**Proposed Third Party Requester Rejection: Ground #26.**

The requester submits on pages 46-47 in the request that claim 4 is unpatentable under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Molitor '751.

Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt mentioning Molitor '637 in view of Molitor '751.

As reported in the Decision granting reexamination, it needs to be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane material for the use as an outer layer.

Claim 4 depends from claim 1 and further limits the outer layer material to a polyurethane base material.

Application/Control Number: 95/000,122

Page 86

Art Unit: 3993

As pointed out in the request on page 46-47:

Molitor '751 teaches that: It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core a cover having a shore C hardness less than 85, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a thermoplastic urethane having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55. (Molitor '751, is, the Molitor col. 2, lines 33-49.) In explaining what a "two-piece" golf ball '751 patent explains that: The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, but also includes balls having a solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt, and other balls having non-wound cores. (Molitor '751, col. 2, lines 7-12.) Molitor explains that the advantages of using this cover on a two-piece golf ball, such as the golf ball of Nesbitt, include "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751 at col. 2, lines 61-68.) Molitor expresses the hardness of the cover material as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751 at col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See [e.g.] U.S. Patent No. 6,905,648, Table 19, Exhibit L.) Therefore, a cover material having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

The request on page 47 makes the conclusion:

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the soft outer cover layer of Nesbitt and replace it with an outer cover made of the soft polyurethane materials taught by Molitor '751 to provide a golf ball that exhibits "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.) Therefore, Nesbitt when taken in view of Molitor '751 render claim 4 obvious under 35 U.S.C. § 103(a). These references raise substantial new questions of patentability that were not previously considered by the PTO. Therefore, reexamination of claim 4 of the '130 patent is proper.

Application/Control Number: 95/000,122

Page 87

Art Unit: 3993

This rejection of claim 4 based on Nesbitt in view of Wu was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Ground 26: Patent Owner's Argument received 30 April 2007

The Patent Owner does not specifically argue this rejection. The argument is that given at "Ground 6: Patent Owner's Argument," *supra*.

Ground 26: Third Party Requester's Comments received 30 May 2007

The Third Party Requester's counter arguments for this claim are the same as given *supra* at "Ground 6: Third Party Requester's Comments."

Ground 26: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner agrees with the proposed rejection of the Third Party Requester, and the rejection of claim 4 under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view Molitor '751 is maintained.. For the response see "Ground 6: Examiner's Response to the Argument and Comments," *supra*.

Re. Claim 5

**Proposed Third Party Requester Rejection: Ground #27.**

Application/Control Number: 95/000,122

Page 88

Art Unit: 3993

The requester submits on page 49-50 in the request that claim 5 is unpatentable under 35 U.S.C. § 102(b) as being anticipated by Sullivan '831.

**This rejection is not adopted for the reasoning that based on the prosecution history of the '130 Patent's copendency Sullivan '831 (Sullivan) is not prior art, see the Decision granting reexamination, mailed 04-06-06, para. 9.**

Ground 27: Patent Owner's Argument received 30 April 2007

The Patent Owner does not argue the non-adoption of this rejection.

Ground 27: Third Party Requester's Comments received 30 May 2007

The Third Party Requester does not argue the non-adoption of this rejection.

Ground 27: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner maintains the non-adoption of this rejection for the reasoning stated above in the section entitled: **Proposed Third Party Requester Rejection: Ground #27.**

**Proposed Third Party Requester Rejection: Ground #28.**

The requester submits on pages 50-54 in the request that claim 5 is unpatentable under 35 U.S.C. § 102(b) as being anticipated by Nesbitt.

In the request on pages 50 through 54 the third party requester proposes that claim 5 be rejected based upon Nesbitt alone with the incorporation by reference of Molitor '637. The third

Application/Control Number: 95/000,122

Page 89

Art Unit: 3993

party requester points out that Molitor '637 is incorporated by reference into Nesbitt because Nesbitt refers to Molitor '637. (See Nesbitt col. 3, ll. 54-60).

This rejection is adopted essentially as proposed in the request.

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt incorporating by reference Molitor '637, as evidenced by Exhibit I (SURLYN Thermoplastic Resins Product Information Sheet) and Exhibit J (ESTANE 58133 Product Specification Sheet.)

Below is a claim chart identifying the claim limitations and which reference Nesbitt or Molitor '637 discloses, teaches or suggests the claim limitations.

Claim 5	Nesbitt (primary) with Molitor '637 (incorporated by reference)
A multi-layer golf ball comprising:	<p>"The disclosure embraces a <b>golf ball</b> and method of making the same..." (Nesbitt, Abstract and FIGS. 1 &amp; 2.)</p> <p>"The present invention relates to golf balls and, more particularly, to improved golf balls comprising multi-layer covers which have a hard inner layer and a relatively soft outer layer." (Nesbitt, col. 1, lines 14-17.)</p>
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or <b>core</b> form as a solid body of resilient polymeric material or rubber-like material in the shape of a <b>sphere</b> ." (Nesbitt, col. 2, ll. 31-34.)
an inner cover layer having	<p>"Disposed on the spherical center or core 12 is a first layer, lamination, ply or <b>inner cover</b> 14 of molded hard, highly flexural modulus resinous material..." (Nesbitt, col. 2, ll. 34-37.)</p> <p>"The multi-layered cover 12 comprises two layers: a first or inner layer or ply 14 .... The inner layer can be ionomer, ionomer blends ...." (Nesbitt, col. 5, lines 6-9.)</p>
a Shore D hardness of about 60 or more molded over said spherical core,	Nesbitt: "[I]nner cover 14 of <b>molded hard</b> , high flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. Dupont de Nemours." (Nesbitt, col. 2, ll. 36-

Application/Control Number: 95/000,122

Page 90

Art Unit: 3993

	<p>38.)</p> <p><u>Per the '130 Patent</u>: "Type 1605 SURLYN (now designated SURLYN 8940)." ('130 Patent, col. 2, ll. 46-47.)</p> <p><u>Exhibit I</u>: SURLYN 8940 has a <b>Shore D hardness of 65</b>.</p>
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	<p><u>Nesbitt</u>: "Reference is made to the application Ser. No. 155,658 of Robert P. <b>Molitor</b> issues into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers 14 ... for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.)</p> <p><u>Molitor '637</u>: Molitor teaches, in examples 1-7, cover materials including a blend of two <b>ionomer resins</b>: SURLYN 1605 and SURLYN 1557. (Molitor '637, col. 14, l. 22 to col. 16, l. 34.)</p> <p>See below for further explanation of how the % by weight and chemical composition limitations are taught.</p>
and having a modulus of from about 15,000 to about 70,000 psi;	See below.
an outer cover layer having	"An <b>outer</b> layer, ply, lamination or <b>cover</b> 16 ... is then remolded onto the inner play or layer 14 ..." (Nesbitt, col. 2, ll. 43-47.)
a Shore D hardness of 64 or less	<p><u>Nesbitt</u>: "Reference is made to application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.)</p> <p>Molitor '637: In examples 16 and 17 teaches an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133.</p> <p>ESTANE 58133 has a <b>Shore D hardness of 55</b>, see Exhibit J (ESTANE Thermoplastic Polyurethane Product Data Sheet)</p> <p>See below for Shore D hardness of 64 or less limitation explanation.</p>



Application/Control Number: 95/000,122

Page 91

Art Unit: 3993

molded over said spherical intermediate ball to form a multi-layer golf ball,	"An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner ply or layer 14 ...." (Nesbitt, col. 2, lines 43-47.)
said outer cover layer comprising a polyurethane based material.	<p><u>Nesbitt</u>: "Reference is made to the application Ser. No. 155,658 of Robert P. <b>Molitor</b> issues into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for one or both layers 14 and 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.)</p> <p><u>Molitor '637</u>: Teaches cover materials including "polyurethanes such as are prepared from polyols and organic polyisocyanates"; specifically teaches Estane 58133 thermoplastic polyurethane. (Molitor '637, col. 5, lines 39-41; col. 18, lines 31-59 (examples 16 and 17).)</p> <p><u>Exhibit J</u>: ESTANE 58133 is a Polyester-Type <b>Thermoplastic Polyurethane</b> (TPU Compound) which is a non-ionomeric thermoplastic elastomer.</p>

As mentioned above, Nesbitt incorporating by reference Molitor '637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor '637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the '981 Patent has "from **about 5[%] to about 15% by weight of unsaturated carboxylic acid.**" '981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been "redesignated" as SURLYN 8940 and SURLYN 1557 has been "redesignated" as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan '873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt's first (inner) layer and is a sodium ion based low acid "(less than or equal to 15 weight

Application/Control Number: 95/000,122

Page 92

Art Unit: 3993

percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi." See '873 Patent, col. 2, ll. 43-50. Moreover, as shown in the "Properties Grid for Selected Industrial Grades of SURLYN" SURLYN 9650's ordinate compared to the other grades of SURLYN is toward the "Low % Acid" side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor '637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid.

Also, as mentioned above, Molitor '637 teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133. A review of the scientific literature yields that ESTANE 58133 has an inherent Shore D hardness of 55, see Exhibit J "ESTANE 58133 TPU Product Data Sheet". **A Shore D hardness of 55 is within the range claimed of Shore D hardness less than 64.** Therefore, Molitor '637's teaching of using ESTANE 58133 inherently meets the claim limitation of providing a outer cover layer of polyurethane material having a Shore hardness of less than 64. Moreover, Molitor '637 teaches a list of materials that may adapted for use in the invention:

Homopolymeric and copolymeric substances, such as (1) vinyl resins formed by the polymerization of vinyl chloride or by the copolymerization of vinyl chloride with unsaturated polymerizable compounds, e.g., vinyl esters; (2) polyolefins such as polyethylene, polypropylene, polybutylene, transpolyisoprene, and the like, including copolymers of polyolefins; (3) polyurethanes such as are prepared from polyols and organic polyisocyanates; (4) polyamides such as polyhexamethylene; (5) polystyrene, high impact polystyrene, styrene acrylonitrile copolymer and ABS, which is acrylonitrile, butadiene styrene copolymer; (6) acrylic resins as exemplified by the copolymers of methylmethacrylate, acrylonitrile, and styrene, etc.; (7) thermoplastic rubbers such as the urethanes, copolymers of ethylene and propylene, and transpolyisoprene, block copolymers of styrene and cispolybutadiene, etc.; and (8) polyphenylene oxide resins, or a blend with high impact polystyrene known by the trade name "Noryl."

Application/Control Number: 95/000,122

Page 93

Art Unit: 3993

See Molitor '637, col. 5, ll. 33-50.

In addition, Nesbitt discloses its outer layer was made from SURLYN 1855 (now SURLYN 9020). This material had inherently flexural modulus of about 14,000 psi and a Shore hardness of 55, see Exhibit I "Typical Properties for Selected Grades of SURLYN". Moreover, as admitted by the inventor Sullivan of the '873 patent, golf ball designers knew that the mechanical properties of the materials used as a golf-ball cover layer were more critical to golf ball performance than the actual materials themselves, see Exhibit G at 334.

Ground 28: Patent Owner's Argument received 30 April 2007

The Patent Owner does not argue this rejection.

Ground 28: Third Party Requester's Comments received 30 May 2007

The Third Party Requester's arguments for this claim are the same as given *supra* at "Ground 3: Third Party Requester's Comments."

Ground 28: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Upon review, the Examiner agrees with the argument of the Third Party Requester and adopts the suggested rejection of this claim with Nesbitt with Molitor '637 incorporated by reference. See "Ground 3: Examiner's Response to the Argument and Comments," *supra*.

**Proposed Third Party Requester Rejection: Ground #29.**

Application/Control Number: 95/000,122

Page 94

Art Unit: 3993

In the alternative, the requester submits on pages 50-54 in the request that claim 5 is unpatentable under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Molitor '637.

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt in view of Molitor '637, as evidenced by Exhibit I (SURLYN Thermoplastic Resins Product Information Sheet) and Exhibit J (ESTANE 58133 Product Specification Sheet.)

Below is a claim chart identifying the claim limitations and which reference Nesbitt or Molitor '637 discloses, teaches or suggests the claim limitations.

Claim 5	Nesbitt (primary) with Molitor '637 (teaching)
A multi-layer golf ball comprising:	<p>"The disclosure embraces a <b>golf ball</b> and method of making the same..." (Nesbitt, Abstract and FIGS. 1 &amp; 2.)</p> <p>"The present invention relates to golf balls and, more particularly, to improved golf balls comprising multi-layer covers which have a hard inner layer and a relatively soft outer layer." (Nesbitt, col. 1, lines 14-17.)</p>
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or <b>core</b> form as a solid body of resilient polymeric material or rubber-like material in the shape of a <b>sphere</b> ." (Nesbitt, col. 2, ll. 31-34.)
an inner cover layer having	<p>"Disposed on the spherical center or core 12 is a first layer, lamination, ply or <b>inner cover</b> 14 of molded hard, highly flexural modulus resinous material..." (Nesbitt, col. 2, ll. 34-37.)</p> <p>"The multi-layered cover 12 comprises two layers: a first or inner layer or ply 14 .... The inner layer can be ionomer, ionomer blends ...." (Nesbitt, col. 5, lines 6-9.)</p>
a Shore D hardness of about 60 or more molded over said spherical core,	<p><u>Nesbitt</u>: "[I]nner cover 14 of <b>molded hard</b>, high flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. Dupont de Nemours." (Nesbitt, col. 2, ll. 36-38.)</p> <p><u>Per the '130 Patent</u>: "Type 1605 SURLYN (now designated SURLYN 8940)." ('130 Patent, col. 2, ll. 46-47.)</p>

Application/Control Number: 95/000,122

Page 95

Art Unit: 3993

	<u>Exhibit I</u> : SURLYN 8940 has a <b>Shore D hardness of 65</b> .
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	<p><u>Nesbitt</u>: "Reference is made to the application Ser. No. 155,658 of Robert P. <b>Molitor</b> issues into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers 14 ... for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.)</p> <p><u>Molitor '637</u>: Molitor teaches, in examples 1-7, cover materials including a blend of two <b>ionomer resins</b>: SURLYN 1605 and SURLYN 1557. (Molitor '637, col. 14, l. 22 to col. 16, l. 34.)</p> <p>See below for further explanation of how the % by weight and chemical composition limitations are taught.</p>
and having a modulus of from about 15,000 to about 70,000 psi;	See below.
an outer cover layer having	"An <b>outer</b> layer, ply, lamination or <b>cover</b> 16 ... is then remolded onto the inner ply or layer 14 ..." (Nesbitt, col. 2, ll. 43-47.)
a Shore D hardness of 64 or less	<p><u>Nesbitt</u>: "Reference is made to application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.)</p> <p>Molitor '637: In examples 16 and 17 teaches an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133.</p> <p>ESTANE 58133 has a <b>Shore D hardness of 55</b>, see Exhibit J (ESTANE Thermoplastic Polyurethane Product Data Sheet)</p> <p>See below for Shore D hardness of 64 or less limitation explanation.</p>
molded over said spherical intermediate ball to form a multi-layer golf ball,	"An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then remolded onto the inner ply or layer 14 ...." (Nesbitt, col. 2, lines 43-47.)

Application/Control Number: 95/000,122

Page 96

Art Unit: 3993

<p>said outer cover layer comprising a polyurethane based material.</p>	<p>Nesbitt: "Reference is made to the application Ser. No. 155,658 of Robert P. <b>Molitor</b> issues into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for one or both layers 14 and 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.)</p> <p><u>Molitor '637</u>: Teaches cover materials including "polyurethanes such as are prepared from polyols and organic polyisocyanates"; specifically teaches Estane 58133 thermoplastic polyurethane. (Molitor '637, col. 5, lines 39-41; col. 18, lines 31-59 (examples 16 and 17).)</p> <p><u>Exhibit J</u>: ESTANE 58133 is a Polyester-Type <b>Thermoplastic Polyurethane</b> (TPU Compound) which is a non-ionomeric thermoplastic elastomer.</p>
---	--

As mentioned above, Nesbitt references Molitor '637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor '637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the '981 Patent has "from **about 5[%] to about 15% by weight of unsaturated carboxylic acid.**" '981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been "redesignated" as SURLYN 8940 and SURLYN 1557 has been "redesignated" as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan '873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt's first (inner) layer and is a sodium ion based low acid "(less than or equal to 15 weight percent methacrylic acid) ionomer resin having a flexural modulus of about 51,000 psi." See '873 Patent, col. 2, ll. 43-50. Moreover, as shown in the "Properties Grid for Selected Industrial

Application/Control Number: 95/000,122

Page 97

Art Unit: 3993

Grades of SURLYN" SURLYN.9650's ordinate compared to the other grades of SURLYN is toward the "Low % Acid" side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor '637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid.

Also, as mentioned above, Molitor '637 teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133. A review of the scientific literature yields that ESTANE 58133 has an inherent Shore D hardness of 55, see Exhibit J "ESTANE 58133 TPU Product Data Sheet". **A Shore D hardness of 55 is within the range claimed of Shore D hardness less than 64.** Therefore, Molitor '637's teaching of using ESTANE 58133 inherently meets the claim limitation of providing a outer cover layer of polyurethane material having a Shore hardness of less than 64. Moreover, Molitor '637 teaches a list of materials that may adapted for use in the invention:

Homopolymeric and copolymeric substances, such as (1) vinyl resins formed by the polymerization of vinyl chloride or by the copolymerization of vinyl chloride with unsaturated polymerizable compounds, e.g., vinyl esters; (2) polyolefins such as polyethylene, polypropylene, polybutylene, transpolyisoprene, and the like, including copolymers of polyolefins; (3) polyurethanes such as are prepared from polyols and organic polyisocyanates; (4) polyamides such as polyhexamethylene; (5) polystyrene, high impact polystyrene, styrene acrylonitrile copolymer and ABS, which is acrylonitrile, butadiene styrene copolymer; (6) acrylic resins as exemplified by the copolymers of methylmethacrylate, acrylonitrile, and styrene, etc.; (7) thermoplastic rubbers such as the urethanes, copolymers of ethylene and propylene, and transpolyisoprene, block copolymers of styrene and cispolybutadiene, etc.; and (8) polyphenylene oxide resins, or a blend with high impact polystyrene known by the trade name "Noryl."

See Molitor '637, col. 5, ll. 33-50.

Application/Control Number: 95/000,122

Page 98

Art Unit: 3993

In addition, Nesbitt discloses its outer layer was made from SURLYN 1855 (now SURLYN 9020). This material had inherently flexural modulus of about 14,000 psi and a Shore hardness of 55, see Exhibit I “Typical Properties for Selected Grades of SURLYN”. Moreover, as admitted by the inventor Sullivan of the ‘873 patent, golf ball designers knew that the mechanical properties of the materials used as a golf-ball cover layer were more critical to golf ball performance than the actual materials themselves, see Exhibit G at 334.

Thus, because it appears that to one of ordinary skill in the art at the time the invention was created that the actual chemical composition of the material is not critical to the practice of the invention with respect to its mechanical performance, i.e. its “click and feel” for a golfer, one of ordinary skill in the art at the time the invention was made would find it obvious to substitute one material for another material if both materials had substantially the same mechanical properties.

This rejection of claim 5 based on Nesbitt in view of Molitor ‘637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Ground 29: Patent Owner’s Argument received 30 April 2007

The Patent Owner does not specifically argue this rejection. The argument is that given at “Ground 4: Patent Owner’s Argument” and “Ground 24: Patent Owner’s Argument,” *supra*.

Ground 29: Third Party Requester’s Comments received 30 May 2007



Application/Control Number: 95/000,122  
Art Unit: 3993

Page 99

The Third Party Requester's counter arguments for this claim are the same as given *supra* at "Ground 4: Third Party Requester's Comments" and "Ground 24: Third Party Requester's Comments."

Ground 29: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner agrees with the proposed rejection of the Third Party Requester, and the rejection of claim 5 under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Molitor '637 is maintained. For the response see "Ground 4: Examiner's Response to the Argument and Comments" and "Ground 24: Examiner's Response to the Argument and Comments," *supra*.

**Proposed Third Party Requester Rejection: Ground #30.**

The requester submits on pages 54-56 in the request that claim 5 is unpatentable under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Wu.

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt mentioning Molitor '637 in view of Wu, as evidenced by Exhibit C.

Below is a claim chart identifying the claim limitations and which reference Nesbitt or Wu discloses, teaches or suggests the claim limitations. As reported in the Decision of 04-06-06 granting reexamination, it needs to be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane materials, which are non-ionic thermoset materials, for the use as an outer layer.

Claim 5	Nesbitt (primary) mentioning Molitor '637 with Wu (teaching)
---------	--

Application/Control Number: 95/000,122

Page 100

Art Unit: 3993

A multi-layer golf ball comprising:	"The disclosure embraces a <b>golf ball</b> and method of making the same..." (Nesbitt, Abstract and FIGS. 1 & 2.)
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or <b>core</b> form as a solid body of resilient polymeric material or rubber-like material in the shape of a <b>sphere</b> ." (Nesbitt, col. 2, ll. 31-34.)
an inner cover layer having	"Disposed on the spherical center or core 12 is a first layer, lamination, ply or <b>inner cover</b> 14 of molded hard, highly flexural modulus resinous material..." (Nesbitt, col. 2, ll. 34-37.)
a Shore D hardness of about 60 or more molded over said spherical core,	<p><u>Nesbitt</u>: "[I]nner cover 14 of <b>molded hard</b>, high flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. Dupont d Nemours." (Nesbitt, col. 2, ll. 36-38.)</p> <p><u>Per the '130 Patent</u>: "Type 1605 SURLYN (now designated SURLYN 8940)." ('130 Patent, col. 2, ll. 46-47.)</p> <p><u>Exhibit I</u>: SURLYN 8940 has a <b>Shore D hardness of 65</b>.</p>
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	<p><u>Nesbitt</u>: "Reference is made to the application Ser. No. 155,658 of Robert P. <b>Molitor</b> issues into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layer 14 ... for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.)</p> <p><u>Molitor '637</u>: Molitor teaches, in examples 1-7, cover materials including a blend of two <b>ionomer resins</b>: SURLYN 1605 and SURLYN 1557. (Molitor '637, col. 14, l. 22 to col. 16, l. 34.)</p> <p>See below for further explanation of how the % by weight and chemical composition limitations are taught.</p>
and having a modulus of from about 15,000 to about 70,000 psi;	See below.
an outer cover layer having	<p>"An <b>outer</b> layer, ply, lamination or <b>cover</b> 16 ... is then remolded onto the inner ply or layer 14 ..." (Nesbitt, col. 2, ll. 43-47.)</p> <p><u>Wu</u>: "Preferably, a golf ball is made in accordance with the</p>

Application/Control Number: 95/000,122

Page 101

Art Unit: 3993

	<p>present invention by molding a cover about a core wherein the cover is formed from a polyurethane composition comprising a polyurethane prepolymer and a slow-reacting polyamine curing agent or a difunctional glycol.” (Wu, col. 3, ll. 62-66.)</p>
<p>a Shore D hardness of 64 or less</p>	<p><u>Nesbitt</u>: “Reference is made to application Ser. No. 155,658 of Robert P. <b>Molitor</b> issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention.” (Nesbitt, col. 3, ll. 54-60.)</p> <p>Molitor ‘637: In examples 16 and 17 teaches an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133.</p> <p>ESTANE 58133 has a <b>Shore D hardness of 55</b>, see Exhibit J (ESTANE Thermoplastic Polyurethane Product Data Sheet)</p> <p><u>Wu</u>: “With polyurethanes made in accordance with the present invention, the degree of cure which has taken place is dependent upon, <i>inter alia</i>, the time, temperature, type of curative, and amount of catalyst used. It has been found that the degree of cure of the cover composition is directly proportional to the hardness of the composition. A hardness of about 10D to 30D, Shore D hardness for the cover stock at the end of the intermediate curing step (i.e. just prior to the final molding step) has been found to be suitable for the present invention, More preferred is a hardness of about 12D to 20D.” (Wu, col. 6, ll. 27-38.)</p> <p>See below for more explanation of how Wu teaches and/or suggests the Shore D hardness of 64 or less limitation explanation.</p>
<p>molded over said spherical intermediate ball to form a multi-layer golf ball</p>	<p>“An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner play or layer 14 ....” (Nesbitt, col. 2, lines 43-47.)</p>
<p>said outer cover layer comprising a polyurethane based material.</p>	<p><u>Exhibit J</u>: ESTANE 58133 is a Polyester-Type <b>Thermoplastic Polyurethane</b> (TPU Compound) which is a non-ionomeric thermoplastic elastomer.</p> <p><u>Wu</u>: “[t]he present invention is a golf ball product made from</p>

Application/Control Number: 95/000,122

Page 102

Art Unit: 3993

	<p>a polyurethane prepolymer cured with a slow-reacting curing agent selected from the group of slow-reacting polyamine curing agents or difunctional glycols. The term “golf ball product” as used in the specification and claims means a cover, a core, a center or a one-piece golf ball. The cover of a golf ball made in accordance with the present invention has been found to have good shear resistance, cut resistance, durability and resiliency. <b>Preferably, the polyurethane composition of the present invention is used to made the cover of a golf ball.</b>” (Wu, col. 2, ll. 33-44.)</p>
--	--

As mentioned above, Nesbitt mentioning Molitor ‘637 teaches the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that SURLYN covered golf balls lack the “click” and “feel” of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar “click” and “feel” of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. This teaching of Shore D hardness is directed to an intermediate curing step product prior to the final molding process to finish the golf ball. Exhibit C demonstrates the actual finished golf ball product having the cover layer that Wu teaches within its disclosure. Exhibit C teaches that the golf ball taught therein is covered by the following patents: 4,783,078; 4,846,910; 4,858,923; 4,904,320; 4,915,390; 5,007,594; 5,080,367; 5,133,509; **5,334,673**; and D339,074. The ‘673 Patent teaches the cover sock of the Exhibit C finished golf ball. Exhibit C teaches that the golf ball taught therein has a cover material made from an “elastomer”, having a thickness of .050”, and 58 Shore D hardness. All three properties are within the range of mechanical properties of

Application/Control Number: 95/000,122

Page 103

Art Unit: 3993

the claim invention (polyurethane is an elastomer, cover layer thickness ranges from 0.010 to 0.070 inches and the Shore D hardness is less than 64). Because it has been admitted by the inventor of the Sullivan '893 patent that the particular chemical properties of the materials (the chemical composition) used in the construction of a golf ball lack criticality as compared to the mechanical properties (the Shore D hardness, flexural modulus, layer thickness) of those compounds used for constructing the different layers (Exhibit G at 334), one of ordinary skill in the art at the time the invention was made would find it obvious to incorporate the teachings of Wu which inherently include the teachings of Shore hardness for the fully cured cover layer as taught in Exhibit C as obvious equivalent materials in order to achieve the same end result of providing a cover layer that has the same "click" and "feel" of a balata cover which the extra durability of an elastomeric material.

This rejection of claim 5 based on Nesbitt mentioning Molitor '637 in view of Wu was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Ground 30: Patent Owner's Argument received 30 April 2007

The Patent Owner does not specifically argue this rejection. The argument is that given at "Ground 5: Patent Owner's Argument" and "Ground 25: Patent Owner's Argument," *supra*.

Ground 30: Third Party Requester's Comments received 30 May 2007

Application/Control Number: 95/000,122

Page 104

Art Unit: 3993

The Third Party Requester's counter arguments for this claim are the same as given *supra* at "Ground 5: Third Party Requester's Comments" and "Ground 25: Third Party Requester's Comments."

Ground 30: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner agrees with the proposed rejection of the Third Party Requester, and the rejection of claim 5 under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Molitor '637 is maintained. For the response see "Ground 5: Examiner's Response to the Argument and Comments" and "Ground 25: Examiner's Response to the Argument and Comments" *supra*.

**Proposed Third Party Requester Rejection: Ground #31.**

The requester submits on pages 57-58 in the request that claim 5 is unpatentable under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Molitor '751.

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt mentioning Molitor '637 in view of Molitor '751.

Below is a claim chart identifying the claim limitation and where Nesbitt and/or Molitor '637 disclose, teach or suggest the claim limitations. As reported in the Decision granting reexamination, it needs to be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane material for the use as an outer layer.

Claim 5	Nesbitt (primary) mentioning Molitor '637
---------	---

Application/Control Number: 95/000,122

Page 105

Art Unit: 3993

A golf ball comprising:	"The disclosure embraces a <b>golf ball</b> and method of making the same..." (Nesbitt, Abstract and FIGS. 1 & 2.)
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or <b>core</b> form as a solid body of resilient polymeric material or rubber-like material in the shape of a <b>sphere</b> ." (Nesbitt, col. 2, ll. 31-34.)
an inner cover layer having	"Disposed on the spherical center or core 12 is a first layer, lamination, ply or <b>inner cover</b> 14 of molded hard, highly flexural modulus resinous material..." (Nesbitt, col. 2, ll. 34-37.)
a Shore D hardness of 60 or more molded over said spherical core,	<p>Nesbitt: "[I]nner cover 14 of <b>molded hard</b>, high flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. Dupont de Nemours." (Nesbitt, col. 2, ll. 36-38.)</p> <p>Per the '130 Patent: "Type 1605 SURLYN (now designated SURLYN 8940)." ('130 Patent, col. 2, ll. 46-47.)</p> <p><u>Exhibit I</u>: SURLYN 8940 has a <b>Shore D hardness of 65</b>.</p>
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	<p>Nesbitt: "Reference is made to the application Ser. No. 155,658 of Robert P. <b>Molitor</b> issues into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers 14 ... for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.)</p> <p><u>Molitor '637</u>: Molitor teaches, in examples 1-7, cover materials including a blend of two <b>ionomer resins</b>: SURLYN 1605 and SURLYN 1557. (Molitor '637, col. 14, l. 22 to col. 16, l. 34.)</p> <p>See below for further explanation of how the % by weight and chemical composition limitations are taught.</p>
and having a modulus of from about 15,000 to about 70,000 psi;	See below.
an outer cover layer having	"An <b>outer</b> layer, ply, lamination or <b>cover</b> 16 ... is then remolded onto the inner play or layer 14 ..." (Nesbitt, col. 2, ll. 43-47.)
a Shore D hardness of about 64	Nesbitt: "Reference is made to application Ser. No. 155,658 of

Application/Control Number: 95/000,122

Page 106

Art Unit: 3993

or less	<p>Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention.” (Nesbitt, col. 3, ll. 54-60.)</p> <p>Molitor ‘637: In examples 16 and 17 teaches an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133.</p> <p>ESTANE 58133 has a Shore D hardness of 55, see Exhibit J (ESTANE Thermoplastic Polyurethane Product Data Sheet)</p> <p>See below for Shore D hardness of 64 or less limitation explanation.</p>
molded over said spherical intermediate ball to form a multi-layer golf ball,	<p>“An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner play or layer 14 ....” (Nesbitt, col. 2, lines 43-47.)</p>
said outer cover layer comprising a relatively soft polymeric material selected from the group consisting of non-ionomeric thermoplastic and thermosetting elastomers.	<p><b>Exhibit J:</b> ESTANE 58133 is a Polyester-Type <b>Thermoplastic Polyurethane</b> (TPU Compound) which is a non-ionomeric thermoplastic elastomer.</p>

As mentioned above, Nesbitt references Molitor ‘637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor ‘637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the ‘981 Patent has “from about 5[%] to about 15% by weight of unsaturated carboxylic acid.” ‘981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been “redesignated” as SURLYN 8940 and SURLYN 1557 has been “redesignated” as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-



Application/Control Number: 95/000,122

Page 107

Art Unit: 3993

15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan '873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt's first (inner) layer and is a sodium ion based low acid "(less than or equal to 15 weight percent methacrylic acid) **ionomer resin having a flexural modulus of about 51,000 psi.**" See '873 Patent, col. 2, ll. 43-50. Moreover, as shown in the "Properties Grid for Selected Industrial Grades of SURLYN" SURLYN 9650's ordinate compared to the other grades of SURLYN, is toward the "Low % Acid" side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor '637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid.

Also, Molitor '637 teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133. A review of the scientific literature yields that ESTANE 58133 has an inherent Shore D hardness of 55, see Exhibit J "ESTANE 58133 TPU Product Data Sheet". A Shore D hardness of 55 is within the range claimed of Shore D hardness less than 64. Therefore, Molitor '637's teaching of using ESTANE 58133 inherently meets the claim limitation of providing a outer cover layer of polyurethane material having a Shore hardness of less than 64. Moreover, Molitor '637 teaches a list of materials that may adapted for use in the invention:

Homopolymeric and copolymeric substances, such as (1) vinyl resins formed by the polymerization of vinyl chloride or by the copolymerization of vinyl chloride with unsaturated polymerizable compounds, e.g., vinyl esters; (2) polyolefins such as polyethylene, polypropylene, polybutylene, transpolyisoprene, and the like, including copolymers of polyolefins; (3) polyurethanes such as are prepared from polyols and organic polyisocyanates; (4) polyamides such as polyhexamethylene; (5) polystyrene, high impact polystyrene, styrene acrylonitrile copolymer and ABS, which is acrylonitrile, butadiene styrene copolymer; (6) acrylic resins as exemplified by the copolymers

Application/Control Number: 95/000,122

Page 108

Art Unit: 3993

of methylmethacrylate, acrylonitrile, and styrene, etc.; (7) thermoplastic rubbers such as the urethanes, copolymers of ethylene and propylene, and transpolyisoprene, block copolymers of styrene and cispolybutadiene, etc.; and (8) polyphenylene oxide resins, or a blend with high impact polystyrene known by the trade name "Noryl."

See Molitor '637, col. 5, ll. 33-50.

As shown above in the claim chart, Nesbitt mentioning Molitor '673 suggests the use of a soft outer cover layer including a polyurethane material. In an analogous golf ball, Molitor '751 teaches that:

It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core **a cover having a shore C hardness less than 85, preferably 70-80, and most preferably 72-76.** The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) **a thermoplastic urethane having a shore A hardness less than 95** and (2) **an ionomer having a shore D hardness greater than 55.**

(Molitor '751, col. 2, ll.33-49 (emphasis added)).

Moreover, in explaining what constitutes a two-piece golf ball, Molitor '751 teaches that:

The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, **but also includes balls having a separate solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt, and other balls have non-wound cores.**

(Molitor '751, col. 3, ll. 7-12 (emphasis added)).

As stated above, Molitor '751 teaches the cover of the golf ball has a Shore C hardness of less than 85, preferably 70-80, most preferably 72-76. As described in Molitor '751's TABLE bridging columns 7 and 8, Sample 8 constitutes one of the preferred embodiments and its cover is taught to have a Shore C hardness of 73. Patent Owner has admitted that a Shore C hardness of 73 is equal to a Shore D hardness of 47, see U.S. Pat. No. 6,905,648, Table 19 (Exhibit L). Thus, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

Application/Control Number: 95/000,122

Page 109

Art Unit: 3993

How one of ordinary skill in the art would discover this inherent mechanical property of Shore D hardness for the polyurethane material used in Molitor '751 is by "translating" a Shore C value to a Shore D value for the polyurethane material. How one of ordinary skill in the art "translates" a Shore C value to a Shore D value is by taking the known Shore hardness values with a given range, in this instance Shore C, for given materials, in this instance polyurethane golf ball covers materials, and taking corresponding measurements with a different set of Shore gauges, in this instance Shore D (but could also be Shore A). A resulting trendline plot occurs from performing this procedure wherein the range of known Shore C values are the abscissa and the range of measured Shore D values are the ordinate. Then, said plot can be use to read equivalent Shore D value for any given Shore C value within the known range of Shore C. This is how one of ordinary skill in the art can know the equivalent Shore D or even Shore A hardness value for any given Shore C hardness value.

As stated in the request on page 28

It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the soft non-ionomeric polymeric outer cover layer incorporated by Nesbitt and replace it with an outer cover layer made of the soft polyurethane material taught by Molitor '751 to provide a golf ball that includes "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, ll. 61-68)

Moreover, because it appears that to one of ordinary skill in the art at the time the invention was created that the actual chemical composition of the material is not critical to the practice of the invention with respect to its mechanical performance, i.e. its "click and feel" for a golfer, one of ordinary skill in the art at the time the invention was made would find it obvious to

Application/Control Number: 95/000,122

Page 110

Art Unit: 3993

substitute one material for another material if both materials had substantially the same mechanical properties.

This rejection of claim 5 based on Nesbitt mentioning Molitor '637 in view of Molitor '751 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Ground 31: Patent Owner's Argument received 30 April 2007

The Patent Owner does not specifically argue this rejection. The argument is that given at "Ground 6: Patent Owner's Argument" and "Ground 26: Patent Owner's Argument," *supra*.

Ground 31: Third Party Requester's Comments received 30 May 2007

The Third Party Requester's counter arguments for this claim are the same as given *supra* at "Ground 6: Third Party Requester's Comments" and "Ground 26: Third Party Requester's Comments."

Ground 31: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner agrees with the proposed rejection of the Third Party Requester, and the rejection of claim 5 under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view Molitor '751 is maintained.. For the response see "Ground 6: Examiner's Response to the Argument and Comments" and "Ground 26: Examiner's Response to the Argument and Comments," *supra*.

Application/Control Number: 95/000,122

Page 111

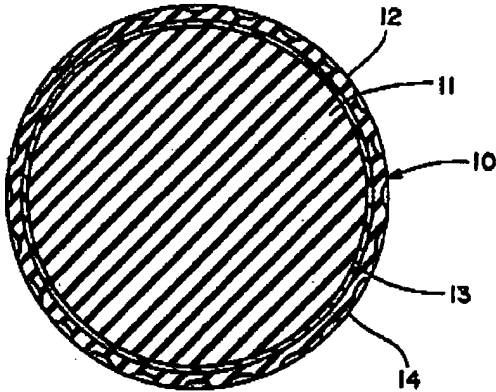
Art Unit: 3993

**Proposed Third Party Requester Rejection: Ground #32.**

The requester submits on pages 58-62 in the request that claim 5 is unpatentable under 35 U.S.C. § 103 as being obvious over Proudfit in view of Molitor '637.

Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Proudfit in view of Molitor '637.

Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests the claim limitations.

Claim 5	Proudfit
A multi-layer golf ball comprising:	"This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover." (col. 1, lines 11-12.)
a spherical core;	 <p>"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 [in the shape of a sphere] and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material. (col. 7, lines 21-24; FIGS 1, 2.) "Two specific solid core compositions used with the new two- layer cover had the composition described in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (col. 7, lines 51-55.)</p>
an inner cover layer having	"FIG. 1 illustrates a two-piece golf ball 10 which

Application/Control Number: 95/000,122

Page 112

Art Unit: 3993

	includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material.” (col. 7, lines 21-24.)								
a Shore D hardness of about 60 or more	<p>The composition of the inner cover layer is described in Table 6.</p> <p style="text-align: center;"><b>TABLE 6</b></p> <table border="1"> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(Proudfit, col. 8, ll. 22-30.)</p> <p>SURLYN 8940 has a <b>Shore D hardness of 65</b>; SURLYN 9910 has a <b>Shore D hardness of 64</b>, see Exhibit I. Therefore, this cover blend has a hardness of 60 or more because materials used to make this inner layer have Shore hardness greater than 60.</p> <p>“The inner layer can be molded in one of two methods:  1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core.  2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core.”  (Proudfit, col. 8, ll. 32-38.)</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								
molded over said spherical core,	<p>“The inner layer can be molded in one of two methods:  1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core.  2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core.”  (Proudfit, col. 8, ll. 32-38.)</p>								
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	<p>The composition of the inner cover layer is described in Table 6.</p> <p style="text-align: center;"><b>TABLE 6</b></p> <table border="1"> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th></tr> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </tbody> </table> <p>(Proudfit, col. 8, ll. 22-30.)</p> <p>SURLYN 8940 and 9910 are both low acid ionomer</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								

Application/Control Number: 95/000,122

Page 113

Art Unit: 3993

	<p>resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.</p> <p>Proudfit either incorporates by reference these chemical properties or the materials used within the Proudfit golf ball inherently have these chemical properties. For instance, Proudfit incorporates by reference U.S. Pat. No. 4,690,981 in the background of its invention. (Proudfit, col. 1, ll. 39-43.) The '981 Patent discloses the preferable amount of <b>unsaturated carboxylic acid is "from about 5[%] to about 15% by weight."</b> ('981 Patent, col. 3, ll. 59-60.) If Proudfit discloses using blends of SURLYN as the chemical for making the inner cover and the '981 Patent is the formulation for the ionomer known in the art as SURLYN, then inherently grades of SURLYN such as SURLYN 8940 and 9910 would be low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.</p>						
and having a modulus of from about 15,000 to about 70,000 psi;	<p>"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard Surlyns" in U.S. Patent No. 4,884,814.)" (col. 5, line 66-col. 6, line 1 .)</p> <p>"Specific standard Surlyn resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc) ...." (col. 6, lines 6-7.)</p> <p>The composition of the inner cover layer is described in Table 6.</p> <div style="text-align: center;"> <p><b>TABLE 6</b></p> <hr/> <p>Composition of Inner Layer of Cover (Parts by Weight)</p> <hr/> <table> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> <tr> <td>Sodium- Surlyn 8940</td><td>75%<sup>a</sup></td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </table> <hr/> </div> <p>(Proudfit, col. 8, ll. 22-30.)</p>	Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75% <sup>a</sup>	Zinc- Surlyn 9910	25%
Ionomer Type	Blend Ratio						
Sodium- Surlyn 8940	75% <sup>a</sup>						
Zinc- Surlyn 9910	25%						
an outer cover layer having a Shore D hardness of about 64 or less	<p>"FIG 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises .... a relatively soft <b>outer layer</b> 14 of polymeric material." (Proudfit, col. 7, ll. 21-24.)</p>						

Application/Control Number: 95/000,122

Page 114

Art Unit: 3993

	<p>“... an outer layer of soft material such as balata or a blend of balata and other elastomers.” (Proudfit, col. 5, ll. 15-17.) An example of this blend is disclose in Table 7 reproduced below.</p> <div style="text-align: center;"> <p><b>TABLE 7</b></p> <p>Composition of Outer Layer (Parts by Weight)</p> <table> <tr> <td>Trans Polyisoprene (TP-301)</td><td>60.00</td></tr> <tr> <td>Polybutadiene</td><td>40.00</td></tr> <tr> <td>Zinc Oxide</td><td>5.00</td></tr> <tr> <td>Titanium DiOxide</td><td>17.00</td></tr> <tr> <td>Ultramarine Blue color</td><td>.50</td></tr> <tr> <td>Zinc DiAcrylate</td><td>35.00</td></tr> <tr> <td>Peroxide (Varox 230 XL)</td><td>2.50</td></tr> <tr> <td><b>Total</b></td><td><b>160.00</b></td></tr> </table> </div> <p>Note that Trans PolyIsoprene is basically the chemical name for balata and Polybutadiene is one of the first types of synthetic rubber or elastomer. As described in the Rule 132 Declaration of Edmund A. Hebert in paragraph 7, the outer cover layer disclosed in Proudfit is the outer cover layer for the golf ball disclosed in Exhibit A to the Rule 132 Declaration and that <b>cover has a Shore D hardness of 52</b>. Thus, Proudfit's outer layer cover inherently has a Shore D hardness of less than 64.</p>	Trans Polyisoprene (TP-301)	60.00	Polybutadiene	40.00	Zinc Oxide	5.00	Titanium DiOxide	17.00	Ultramarine Blue color	.50	Zinc DiAcrylate	35.00	Peroxide (Varox 230 XL)	2.50	<b>Total</b>	<b>160.00</b>
Trans Polyisoprene (TP-301)	60.00																
Polybutadiene	40.00																
Zinc Oxide	5.00																
Titanium DiOxide	17.00																
Ultramarine Blue color	.50																
Zinc DiAcrylate	35.00																
Peroxide (Varox 230 XL)	2.50																
<b>Total</b>	<b>160.00</b>																
molded over said spherical intermediate ball to form a multi-layer golf ball,	<p>“A golf ball cover in accordance with the invention includes ... an outer layer of soft material such as balata or a blend of balata and other elastomers. Preferably, the outer layer is a blend of balata and a thermally crosslinkable elastomer such as polybutadiene. <b>The balata and elastomer are crosslinked [(an indication that the material is a thermosetting material)]</b> during the molding of the ball by a crosslinker such as zinc diacrylate and a crosslinking initiator such as organic peroxide rather than using the conventional sulfur and RR2 crystals curing system for balata covers. The outer layer of the cover is completely crosslinked when the ball is removed from the mold, and subsequent processing steps can be performed in the same manner as on SURLYN covered balls.” (Proudfit, col. 5, ll. 17-27.)</p>																
the outer layer comprising polyurethane based material.	<p>“... an outer layer of soft material such as balata or a blend of balata and other elastomers.” (col. 5, lines 15-17.) Also, see below.</p>																



Application/Control Number: 95/000,122

Page 115

Art Unit: 3993

As pointed out in the request on page 61 and 62:

While Proudfit may not expressly disclose the use of polyurethane as an outer cover material, it would have been obvious given that "[t]he patent literature is replete with proposed cover formulations seeking to improve upon the balata and ionomer covers [including] [p]olyurethane ...." (See Molitor '751, col. 2, lines 9-12.) Soft polyurethane materials had been known to be a substitute for balata covers for decades prior to the filing of the '130 patent.

For example, Molitor '637 discloses the use of polyurethane material as a soft polymeric material that may be used as an outer cover layer of a golf ball. (See Molitor '637, col. 5, lines 33-41; col. 18, Examples 16 and 17.) One exemplary polyurethane material used by Molitor as an outer cover material includes Estane 58133.

As was readily appreciated by those skilled in the art--including the inventor of the '130 patent--the types of materials used in a golf ball are not as critical to a golf ball's playability as are the mechanical properties of those materials. (See Exhibit G at 334.) The Estane 58133 is a relatively soft material and has a Shore D hardness of 55 and is also a low flexural modulus material having a modulus of about 25,000 psi. (See Exhibit J.) Proudfit's outer cover layer is also relatively soft and has a flexural modulus between 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31.) Due to the similarities between these two materials, the ordinarily skilled artisan would have recognized the substitutability of these two materials as well as the benefits of using polyurethane as an outer cover material.

On page 62, the request concludes:

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the balata-based outer cover layer of Proudfit to include the Estane polyurethane outer cover layer material of Molitor '637 because such was a well known substitute to balata and gives a number of advantages over balata as would have been readily appreciated by those skilled in the art. These advantages include: (1) improved processability; (2) improved durability when compared to balata; (3) cost-effectiveness when compared to balata; and (4) having a good "click" and "feel." (See *supra* [regarding the what "click" and "feel" mean to a golfer]) All of this would have led one of ordinary skill in the art to replace the soft balata outer cover layer of Proudfit with the soft polyurethane outer cover layer of Molitor '637 at the time of the alleged invention.

This rejection of claim 5 based on Proudfit in view of Molitor '637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Application/Control Number: 95/000,122

Page 116

Art Unit: 3993

Ground 32: Patent Owner's Argument received 30 April 2007

The Patent Owner does not specifically argue this rejection. The argument is that given at "Ground 1: Patent Owner's Argument" and "Ground 20: Patent Owner's Argument," *supra*.

Ground 32: Third Party Requester's Comments received 30 May 2007

The Third Party Requester's counter arguments for this claim are the same as given *supra* at "Ground 1: Third Party Requester's Comments" and "Ground 20: Third Party Requester's Comments."

Ground 32: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner agrees with the proposed rejection of the Third Party Requester, and the rejection of claim 5 under 35 U.S.C. § 103(a) as being obvious by Proudfit in view Molitor '637 is maintained.. For the response see "Ground 1: Examiner's Response to the Argument and Comments" and "Ground 20: Examiner's Response to the Argument and Comments," *supra*.

**Proposed Third Party Requester Rejection: Ground #33.**

The requester submits on pages 62-64 in the request that claim 5 is unpatentable under 35 U.S.C. § 103 as being obvious over Proudfit in view of Wu.

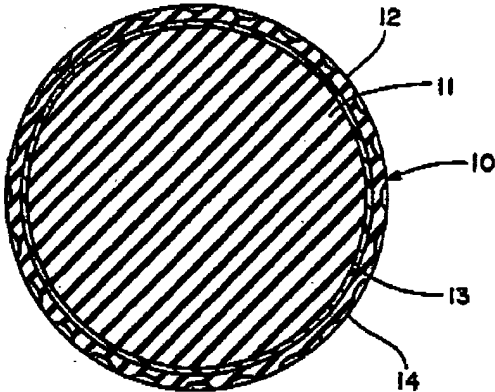
Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Proudfit in view of Wu.

Application/Control Number: 95/000,122

Page 117

Art Unit: 3993

Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests the claim limitations.

Claim 5	Proudfit
A multi-layer golf ball comprising:	“This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover.” (col. 1, lines 11-12.)
a spherical core;	 <p>“FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 [in the same of a sphere] and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material.” (col. 7, lines 21-24; FIGS 1, 2.) “Two specific solid core compositions used with the new two- layer cover had the composition described in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball.” (col. 7, lines 51-55.)</p>
an inner cover layer having	“FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material.” (col. 7, lines 21-24.)
a Shore D hardness of about 60 or more	The composition of the inner cover layer is described in Table 6.

Application/Control Number: 95/000,122

Page 118

Art Unit: 3993

	<p style="text-align: center;"><b>TABLE 6</b></p> <hr/> <p style="text-align: center;">Composition of Inner Layer of Cover (Parts by Weight)</p> <hr/> <table> <tr> <th style="text-align: center;">Ionomer Type</th><th style="text-align: center;">Blend Ratio</th></tr> <tr> <td style="text-align: center;">Bodum- Surlyn 8940</td><td style="text-align: center;">75%</td></tr> <tr> <td style="text-align: center;">Zinc- Surlyn 9910</td><td style="text-align: center;">25%</td></tr> </table> <hr/> <p>(Proudfit, col. 8, ll. 22-30.)</p> <p>SURLYN 8940 has a <b>Shore D hardness of 65</b>; SURLYN 9910 has a <b>Shore D hardness of 64</b>, see Exhibit I. Therefore, this cover blend has a hardness of 60 or more because materials used to make this inner layer have Shore hardness greater than 60.</p> <p>“The inner layer can be molded in one of two methods:</p> <ol style="list-style-type: none"> <li>1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core.</li> <li>2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core.”</li> </ol> <p>(Proudfit, col. 8, ll. 32-38.)</p>	Ionomer Type	Blend Ratio	Bodum- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Ionomer Type	Blend Ratio						
Bodum- Surlyn 8940	75%						
Zinc- Surlyn 9910	25%						
molded over said spherical core,	<p>“The inner layer can be molded in one of two methods:</p> <ol style="list-style-type: none"> <li>1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core.</li> <li>2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core.”</li> </ol> <p>(Proudfit, col. 8, ll. 32-38.)</p>						
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	<p>The composition of the inner cover layer is described in Table 6.</p> <p style="text-align: center;"><b>TABLE 6</b></p> <hr/> <p style="text-align: center;">Composition of Inner Layer of Cover (Parts by Weight)</p> <hr/> <table> <tr> <th style="text-align: center;">Ionomer Type</th><th style="text-align: center;">Blend Ratio</th></tr> <tr> <td style="text-align: center;">Bodum- Surlyn 8940</td><td style="text-align: center;">75%</td></tr> <tr> <td style="text-align: center;">Zinc- Surlyn 9910</td><td style="text-align: center;">25%</td></tr> </table> <hr/> <p>(Proudfit, col. 8, ll. 22-30.)</p> <p>SURLYN 8940 and 9910 are both low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.</p> <p>Proudfit either incorporates by reference these chemical properties or the materials used within the Proudfit golf ball inherently have these chemical</p>	Ionomer Type	Blend Ratio	Bodum- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Ionomer Type	Blend Ratio						
Bodum- Surlyn 8940	75%						
Zinc- Surlyn 9910	25%						

Application/Control Number: 95/000,122

Page 119

Art Unit: 3993

	<p>properties. For instance, Proudfit incorporates by reference U.S. Pat. No. 4,690,981 in the background of its invention. (Proudfit, col. 1, ll. 39-43.) The '981 Patent discloses the preferable amount of <b>unsaturated carboxylic acid</b> is "from about 5[%] to about 15% by weight." ('981 Patent, col. 3, ll. 59-60.) If Proudfit discloses using blends of SURLYN as the chemical for making the inner cover and the '981 Patent is the formulation for the ionomer known in the art as SURLYN, then inherently grades of SURLYN such as SURLYN 8940 and 9910 would be low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.</p>						
<p>and having a modulus of from about 15,000 to about 70,000 psi;</p>	<p>"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard Surlyns" in U.S. Patent No. 4,884,814.)" (col. 5, line 66-col. 6, line 1.)</p> <p>"Specific standard Surlyn resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc) ...." (col. 6, lines 6-7.)</p> <p>The composition of the inner cover layer is described in Table 6.</p> <div style="text-align: center;"> <p><b>TABLE 6</b></p> <p><b>Composition of Inner Layer of Cover</b> (Parts by Weight)</p> <table> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </table> </div> <p>(Proudfit, col. 8, ll. 22-30.)</p>	Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Ionomer Type	Blend Ratio						
Sodium- Surlyn 8940	75%						
Zinc- Surlyn 9910	25%						
<p>an outer cover layer having a Shore D hardness of about 64 or less</p>	<p>"FIG 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises .... a relatively soft <b>outer layer</b> 14 of polymeric material." (Proudfit, col. 7, ll. 21-24.)</p> <p>"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (Proudfit, col. 5, ll. 15-17.) An example of this blend is disclose in Table 7 reproduced below.</p>						

Application/Control Number: 95/000,122

Page 120

Art Unit: 3993

	<p style="text-align: center;"><b>TABLE 7</b></p> <hr/> <p style="text-align: center;">Composition of Outer Layer (Parts by Weight)</p> <hr/> <table> <tr> <td>Trans Polyisoprene (TP-301)</td><td style="text-align: right;">60.00</td></tr> <tr> <td>Polybutadiene</td><td style="text-align: right;">40.00</td></tr> <tr> <td>Zinc Oxide</td><td style="text-align: right;">5.00</td></tr> <tr> <td>Titanium Dioxide</td><td style="text-align: right;">17.00</td></tr> <tr> <td>Ultramarine Blue color</td><td style="text-align: right;">.50</td></tr> <tr> <td>Zinc DiAcrylate</td><td style="text-align: right;">35.00</td></tr> <tr> <td>Peroxide (Varox 230 XL)</td><td style="text-align: right;">2.50</td></tr> <tr> <td><b>Total</b></td><td style="text-align: right;"><b>160.00</b></td></tr> </table> <hr/> <p>Note that Trans PolyIsoprene is basically the chemical name for balata and Polybutadiene is one of the first types of synthetic rubber or elastomer. As described in the Rule 132 Declaration of Edmund A. Hebert in paragraph 7, the outer cover layer disclosed in Proudfit is the outer cover layer for the golf ball disclosed in Exhibit A to the Rule 132 Declaration and that <b>cover has a Shore D hardness of 52</b>. Thus, Proudfit's outer layer cover inherently has a Shore D hardness of less than 64.</p>	Trans Polyisoprene (TP-301)	60.00	Polybutadiene	40.00	Zinc Oxide	5.00	Titanium Dioxide	17.00	Ultramarine Blue color	.50	Zinc DiAcrylate	35.00	Peroxide (Varox 230 XL)	2.50	<b>Total</b>	<b>160.00</b>
Trans Polyisoprene (TP-301)	60.00																
Polybutadiene	40.00																
Zinc Oxide	5.00																
Titanium Dioxide	17.00																
Ultramarine Blue color	.50																
Zinc DiAcrylate	35.00																
Peroxide (Varox 230 XL)	2.50																
<b>Total</b>	<b>160.00</b>																
molded over said spherical intermediate ball to form a multi-layer golf ball,	<p>"A golf ball cover in accordance with the invention includes ... an outer layer of soft material such as balata or a blend of balata and other elastomers. Preferably, the outer layer is a blend of balata and a thermally crosslinkable elastomer such as polybutadiene. <b>The balata and elastomer are crosslinked [(an indication that the material is a thermosetting material)]</b> during the molding of the ball by a crosslinker such as zinc diacrylate and a crosslinking initiator such as organic peroxide rather than using the conventional sulfur and RR2 crystals curing system for balata covers. The outer layer of the cover is completely crosslinked when the ball is removed from the mold, and subsequent processing steps can be performed in the same manner as on SURLYN covered balls." (Proudfit, col. 5, ll. 17-27.)</p>																
the outer layer comprising polyurethane based material.	<p>"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.) Also, see below.</p>																

As pointed out in the request on pages 62 and 63:

... Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the

Application/Control Number: 95/000,122

Page 121

Art Unit: 3993

use of a polyurethane material as the outer cover layer of a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the soft balata outer cover layer of Proudfit to include the soft polyurethane material taught by Wu. Wu teaches that: "The problem with SURLYN®-covered golf balls, however, is that they lack the "click" and "feel" which golfers had become accustomed to with balata. "Click" is the sound when the ball is hit by a golf club and "feel" is the overall sensation imparted to the golfer when the ball is hit. It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the "click" and "feel" of balata. (Wu at col. 1, lines 36-46.) As the inventor of the '130 patent had indicated in a 1994 publication, golf ball designers understood that the mechanical properties of the layers impacted the performance of the golf ball more than the materials themselves. (Exhibit G at 334.) Additionally, Wu's polyurethane material inherently has a flexural modulus of about 23,000 psi as measured in accordance with ASTM standards. (Decl. of Jeff Dalton at ¶ 7.) Proudfit's outer cover layer material has a flexural modulus of between about 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31.) Thus, one of ordinary skill in the art would have appreciated that using Wu's polyurethane as Proudfit's outer cover layer would have provided similar playability characteristics as well as numerous advantages including, for example, durability.

Based on Wu's teachings, one of ordinary skill in the art would have recognized the substitutability of soft polyurethane for soft balata-based materials and the advantages of making such a substitution. These advantages include (1) low price compared to balata; (2) better cut resistance when compared to balata; and (3) a "click" and "feel" that is similar to balata. Moreover, the replacing the balata-material taught by Proudfit would have been obvious to those skilled in the art prior to November 9, 1995 because before that time, the Titleist Professional™ golf ball, which had used Wu's polyurethane material, had replaced balata-covered balls as the market leader. (See Exhibit C; see also Decl. of Jeffery L. Dalton at ¶¶ 3-4.)

On page 64 the request concludes with:

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the alleged invention to modify Proudfit's golf ball by replacing the soft balata outer cover layer with an outer cover layer made of soft polyurethane material because polyurethane provides numerous advantages over balata while exhibiting the "click" and "feel" of balata.

This rejection of claim 5 based on Proudfit in view of Wu was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Application/Control Number: 95/000,122

Page 122

Art Unit: 3993

Ground 33: Patent Owner's Argument received 30 April 2007

The Patent Owner does not specifically argue this rejection. The argument is that given at "Ground 1: Patent Owner's Argument" and "Ground 21: Patent Owner's Argument," *supra*.

Ground 33: Third Party Requester's Comments received 30 May 2007

The Third Party Requester's counter arguments for this claim are the same as given *supra* at "Ground 1: Third Party Requester's Comments" and "Ground 21: Third Party Requester's Comments."

Ground 33: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner agrees with the proposed rejection of the Third Party Requester, and the rejection of claim 5 under 35 U.S.C. § 103(a) as being obvious by Proudfit in view Molitor '637 is maintained.. For the response see "Ground 1: Examiner's Response to the Argument and Comments" and "Ground 21: Examiner's Response to the Argument and Comments," *supra*.

**Proposed Third Party Requester Rejection: Ground #34.**

The requester submits on pages 64-65 in the request that claim 5 is unpatentable under 35 U.S.C. § 103 as being obvious over Proudfit in view of Molitor '751.

Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Proudfit in view of Molitor '751.

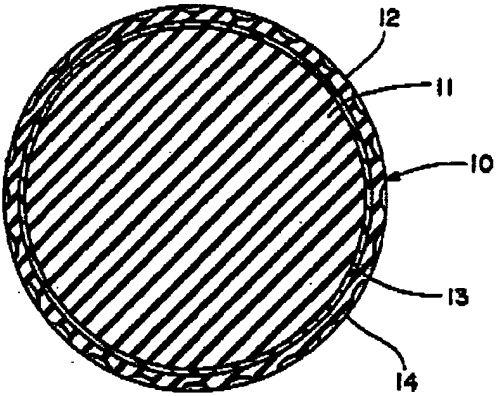


Application/Control Number: 95/000,122

Page 123

Art Unit: 3993

Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests the claim limitations.

Claim 5	Proudfit
A multi-layer golf ball comprising:	<p>“This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover.” (col. 1, lines 11-12.)</p>
a spherical core;	 <p>“FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 [in the same of a sphere] and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material.” (col. 7, lines 21-24; FIGS 1, 2.) “Two specific solid core compositions used with the new two-layer cover had the composition described in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball.” (col. 7, lines 51-55.)</p>
an inner cover layer having	<p>“FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material.” (col. 7, lines 21-24.)</p>
a Shore D hardness of about 60 or more	<p>The composition of the inner cover layer is described in Table 6.</p>

Application/Control Number: 95/000,122

Page 124

Art Unit: 3993

	<p style="text-align: center;"><b>TABLE 6</b></p> <hr/> <p style="text-align: center;">Composition of Inner Layer of Cover (Parts by Weight)</p> <hr/> <table> <tr> <th style="text-align: center;">Ionomer Type</th><th style="text-align: center;">Blend Ratio</th></tr> <tr> <td style="text-align: center;">Sodium- Surlyn 8940</td><td style="text-align: center;">75%</td></tr> <tr> <td style="text-align: center;">Zinc- Surlyn 9910</td><td style="text-align: center;">25%</td></tr> </table> <hr/> <p>(Proudfit, col. 8, ll. 22-30.)</p> <p>SURLYN 8940 has a <b>Shore D hardness of 65</b>; SURLYN 9910 has a <b>Shore D hardness of 64</b>, see Exhibit I. Therefore, this cover blend has a hardness of 60 or more because materials used to make this inner layer have Shore hardness greater than 60.</p> <p>“The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core.” (Proudfit, col. 8, ll. 32-38.)</p>	Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Ionomer Type	Blend Ratio						
Sodium- Surlyn 8940	75%						
Zinc- Surlyn 9910	25%						
molded over said spherical core,	<p>“The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core.” (Proudfit, col. 8, ll. 32-38.)</p>						
said inner cover layer comprising an ionomeric resin including no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	<p>The composition of the inner cover layer is described in Table 6.</p> <p style="text-align: center;"><b>TABLE 6</b></p> <hr/> <p style="text-align: center;">Composition of Inner Layer of Cover (Parts by Weight)</p> <hr/> <table> <tr> <th style="text-align: center;">Ionomer Type</th><th style="text-align: center;">Blend Ratio</th></tr> <tr> <td style="text-align: center;">Sodium- Surlyn 8940</td><td style="text-align: center;">75%</td></tr> <tr> <td style="text-align: center;">Zinc- Surlyn 9910</td><td style="text-align: center;">25%</td></tr> </table> <hr/> <p>(Proudfit, col. 8, ll. 22-30.)</p> <p>SURLYN 8940 and 9910 are both low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.</p> <p>Proudfit either incorporates by reference these chemical properties or the materials used within the Proudfit golf ball inherently have these chemical</p>	Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Ionomer Type	Blend Ratio						
Sodium- Surlyn 8940	75%						
Zinc- Surlyn 9910	25%						

	<p>properties. For instance, Proudfit incorporates by reference U.S. Pat. No. 4,690,981 in the background of its invention. (Proudfit, col. 1, ll. 39-43.) The '981 Patent discloses the preferable amount of <b>unsaturated carboxylic acid is "from about 5[%] to about 15% by weight."</b> ('981 Patent, col. 3, ll. 59-60.) If Proudfit discloses using blends of SURLYN as the chemical for making the inner cover and the '981 Patent is the formulation for the ionomer known in the art as SURLYN, then inherently grades of SURLYN such as SURLYN 8940 and 9910 would be low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.</p>						
and having a modulus of from about 15,000 to about 70,000 psi;	<p>"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard Surlyns" in U.S. Patent No. 4,884,814.)" (col. 5, line 66-col. 6, line 1 .)</p> <p>"Specific standard Surlyn resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc) ...." (col. 6, lines 6-7.)</p> <p>The composition of the inner cover layer is described in Table 6.</p> <div style="text-align: center;"> <p><b>TABLE 6</b></p> <p><b>Composition of Inner Layer of Cover</b> (Parts by Weight)</p> <table> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </table> </div> <p>(Proudfit, col. 8, ll. 22-30.)</p>	Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Ionomer Type	Blend Ratio						
Sodium- Surlyn 8940	75%						
Zinc- Surlyn 9910	25%						
an outer cover layer having a Shore D hardness of about 64 or less	<p>"FIG 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises .... a relatively soft <b>outer layer 14</b> of polymeric material." (Proudfit, col. 7, ll. 21-24.)</p> <p>"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (Proudfit, col. 5, ll. 15-17.) An example of this blend is disclose in Table 7 reproduced below.</p>						

Application/Control Number: 95/000,122

Page 126

Art Unit: 3993

	<p style="text-align: center;"><b>TABLE 7</b></p> <hr/> <p style="text-align: center;">Composition of Outer Layer (Parts by Weight)</p> <hr/> <table> <tr> <td>Trans Polyisoprene (TP-301)</td><td>60.00</td></tr> <tr> <td>Polybutadiene</td><td>40.00</td></tr> <tr> <td>Zinc Oxide</td><td>5.00</td></tr> <tr> <td>Titanium DiOxide</td><td>17.00</td></tr> <tr> <td>Ultramarine Blue color</td><td>.50</td></tr> <tr> <td>Zinc DiAcrylate</td><td>35.00</td></tr> <tr> <td>Peroxide (Varox 230 XL)</td><td>2.50</td></tr> <tr> <td><b>Total</b></td><td><b>160.00</b></td></tr> </table> <hr/> <p>Note that Trans PolyIsoprene is basically the chemical name for balata and Polybutadiene is one of the first types of synthetic rubber or elastomer. As described in the Rule 132 Declaration of Edmund A. Hebert in paragraph 7, the outer cover layer disclosed in Proudfit is the outer cover layer for the golf ball disclosed in Exhibit A to the Rule 132 Declaration and that <b>cover has a Shore D hardness of 52</b>. Thus, Proudfit's outer layer cover inherently has a Shore D hardness of less than 64.</p>	Trans Polyisoprene (TP-301)	60.00	Polybutadiene	40.00	Zinc Oxide	5.00	Titanium DiOxide	17.00	Ultramarine Blue color	.50	Zinc DiAcrylate	35.00	Peroxide (Varox 230 XL)	2.50	<b>Total</b>	<b>160.00</b>
Trans Polyisoprene (TP-301)	60.00																
Polybutadiene	40.00																
Zinc Oxide	5.00																
Titanium DiOxide	17.00																
Ultramarine Blue color	.50																
Zinc DiAcrylate	35.00																
Peroxide (Varox 230 XL)	2.50																
<b>Total</b>	<b>160.00</b>																
molded over said spherical intermediate ball to form a multi-layer golf ball,	<p>"A golf ball cover in accordance with the invention includes ... an outer layer of soft material such as balata or a blend of balata and other elastomers. Preferably, the outer layer is a blend of balata and a thermally crosslinkable elastomer such as polybutadiene. <b>The balata and elastomer are crosslinked [(an indication that the material is a thermosetting material)]</b> during the molding of the ball by a crosslinker such as zinc diacrylate and a crosslinking initiator such as organic peroxide rather than using the conventional sulfur and RR2 crystals curing system for balata covers. The outer layer of the cover is completely crosslinked when the ball is removed from the mold, and subsequent processing steps can be performed in the same manner as on SURLYN covered balls." (Proudfit, col. 5, ll. 17-27.)</p>																
the outer layer comprising polyurethane based material.	<p>"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.) Also, see below.</p>																

As pointed out in the request on pages 64 and 65:

...Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use

of a polyurethane material as the outer cover layer for a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Proudfit's golf ball by replacing the soft balata outer cover layer with the soft polyurethane outer cover layer taught by Molitor '751.

Molitor '751 teaches that: It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core a cover having a shore C hardness less than 85, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a thermoplastic urethane having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55. (Molitor '751, col. 2, lines 33-49.) In explaining what a "two-piece" golf ball is, the Molitor '751 patent explains that: The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, but also includes balls having a solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt, and Other balls having non-wound cores. (Molitor '751, col. 2, lines 7-12.)

Proudfit teaches a "two-piece" golf ball that fits within this definition. Molitor '751 explains that the advantages of using a cover layer including a soft polyurethane material on a two-piece golf ball, such as the golf ball of Proudfit, include "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two- piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Molitor expresses the hardness of the cover material as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751, col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See U.S. Patent No. 6,905,648, Table 19 (Exhibit L.) A cover material having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

On page 65 the request concludes:

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the soft balata outer cover layer of Proudfit with the soft outer cover layer including a soft polyurethane material as taught by Molitor '751 to provide golf balls that have "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Application/Control Number: 95/000,122

Page 128

Art Unit: 3993

This rejection of claim 5 based on Proudfit in view of Wu was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Ground 34: Patent Owner's Argument received 30 April 2007

The Patent Owner does not specifically argue this rejection. The argument is that given at "Ground 1: Patent Owner's Argument" and "Ground 22: Patent Owner's Argument," *supra*.

Ground 34: Third Party Requester's Comments received 30 May 2007

The Third Party Requester's counter arguments for this claim are the same as given *supra* at "Ground 1: Third Party Requester's Comments" and "Ground 22: Third Party Requester's Comments."

Ground 34: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner agrees with the proposed rejection of the Third Party Requester, and the rejection of claim 5 under 35 U.S.C. § 103(a) as being obvious by Proudfit in view Molitor '751 is maintained.. For the response see "Ground 1: Examiner's Response to the Argument and Comments" and "Ground 22: Examiner's Response to the Argument and Comments," *supra*.

**Proposed Third Party Requester Rejection: Ground #35.**

Application/Control Number: 95/000,122

Page 129

Art Unit: 3993

The requester submits on pages 67-68 in the request that claim 6 is unpatentable under 35 U.S.C. § 102(b) as being anticipated by Sullivan.

**This rejection is not adopted for the reasoning that based on the prosecution history of the '130 Patent's copendency Sullivan '831 (Sullivan) is not prior art, see the Decision granting reexamination, mailed 04-06-06, para. 9.**

Ground 35: Patent Owner's Argument received 30 April 2007

The Patent Owner does not argue the non-adoption of this rejection.

Ground 35: Third Party Requester's Comments received 30 May 2007

The Third Party Requester does not argue the non-adoption of this rejection.

Ground 35: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner maintains the non-adoption of this rejection for the reasoning stated above in the section entitled: **Proposed Third Party Requester Rejection: Ground #35.**

**Proposed Third Party Requester Rejection: Ground #36.**

The requester submits on pages 69-72 in the request that claim 6 is unpatentable under 35 U.S.C. § 102(b) as being anticipated by Nesbitt.

In the request on pages 69 through 72 the third party requester proposes that claim 5 be rejected based upon Nesbitt alone with the incorporation by reference of Molitor '637. The third

Application/Control Number: 95/000,122

Page 130

Art Unit: 3993

party requester points out that Molitor '637 is incorporated by reference into Nesbitt because Nesbitt refers to Molitor '637. (See Nesbitt col. 3, ll. 54-60).

This rejection is adopted essentially as proposed in the request.

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt with incorporation by reference of Molitor '637, as evidenced by Exhibit I (SURLYN Thermoplastic Resins Product Information Sheet) and Exhibit J (ESTANE 58133 Product Specification Sheet.)

Below is a claim chart identifying the claim limitations and which reference Nesbitt or Molitor '637 discloses, teaches or suggests the claim limitations.

Claim 6	Nesbitt (primary) with Molitor '637 (incorporated by reference)
A multi-layer golf ball comprising:	<p>"The disclosure embraces a <b>golf ball</b> and method of making the same..." (Nesbitt, Abstract and FIGS. 1 &amp; 2.)</p> <p>"The present invention relates to golf balls and, more particularly, to improved golf balls comprising <b>multi-layer covers</b> which have a hard inner layer and a relatively soft outer layer." (Nesbitt, col. 1, lines 14-17.)</p>
a spherical core;	<p>"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or <b>core</b> form as a solid body of resilient polymeric material or rubber-like material in the shape of a <b>sphere</b>." (Nesbitt, col. 2, ll. 31-34.)</p>
an inner cover layer molded over said spherical core to form a spherical intermediate ball,	<p>"Disposed on the spherical center or core 12 is a first layer, lamination, ply or <b>inner cover</b> 14 of molded hard, highly flexural modulus resinous material..." (Nesbitt, col. 2, ll. 34-37.)</p> <p>"The multi-layered cover 12 comprises two layers: a first or inner layer or ply 14 .... The inner layer can be ionomer, ionomer blends ...." (Nesbitt, col. 5, lines 6-9.)</p>
said inner cover layer having a Shore D	Nesbitt: "[I]nner cover 14 of <b>molded hard</b> , high



Application/Control Number: 95/000,122

Page 131

Art Unit: 3993

hardness of 60 or greater	<p>flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. Dupont de Nemours.” (Nesbitt, col. 2, ll. 36-38.)</p> <p>Per the ‘130 Patent: “Type 1605 SURLYN (now designated SURLYN 8940).” (‘130 Patent, col. 2, ll. 46-47.)</p> <p><u>Exhibit I</u>: SURLYN 8940 has a <b>Shore D hardness of 65</b>.</p>
and comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	<p><u>Nesbitt</u>: “Reference is made to the application Ser. No. 155,658 of Robert P. <b>Molitor</b> issues into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers 14 ... for the golf ball of this invention.” (Nesbitt, col. 3, ll. 54-60.)</p> <p><u>Molitor ‘637</u>: Molitor teaches, in examples 1-7, cover materials including a blend of two <b>ionomer resins</b>: SURLYN 1605 and SURLYN 1557. (Molitor ‘637, col. 14, l. 22 to col. 16, l. 34.)</p> <p>See below for further explanation of how the % by weight and chemical composition limitations are taught.</p>
and having a modulus of from about 15,000 to about 70,000 psi;	See below.
an outer cover layer molded about said spherical intermediate ball to form a multi-layer golf ball,	“An <b>outer</b> layer, ply, lamination or <b>cover</b> 16 ... is then remolded onto the inner play or layer 14 ...” (Nesbitt, col. 2, ll. 43-47.)
the outer layer comprising a non-ionomeric elastomer selected from the group consisting of polyester elastomer, polyester, polyether polyurethane and polyester amide,	<p><u>Nesbitt</u>: “Reference is made to application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention.” (Nesbitt, col. 3, ll. 54-60.)</p> <p>Molitor ‘637: In examples 16 and 17 teaches an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133.</p>

Application/Control Number: 95/000,122

Page 132

Art Unit: 3993

<p>said outer cover layer having a modulus in the range of about 1,000 to about 30,000 psi</p>	<p>"An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner ply or layer 14 ...." (Nesbitt, col. 2, lines 43-47.)</p> <p><u>Nesbitt</u>: Teaches Surlyn® 1855 (now Surlyn® 9020) which has a flexural modulus of about 14,000 psi.</p> <p><u>Exhibit J</u>: Estane 58133 Product Information: ESTANE 58133 has a modulus of 25,000 psi.</p>
<p>and a Shore D hardness of 64 or less.</p>	<p><u>Nesbitt</u>: "Reference is made to the application Ser. No. 155,658 of Robert P. <b>Molitor</b> issues into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for one or both layers 14 and 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.)</p> <p><u>Molitor '637</u>: Teaches cover materials including "polyurethanes such as are prepared from polyols and organic polyisocyanates"; specifically teaches Estane 58133 thermoplastic polyurethane. (Molitor '637, col. 5, lines 39-41; col. 18, lines 31-59 (examples 16 and 17).)</p> <p><u>Exhibit J</u>: ESTANE 58133 is a Polyester-Type <b>Thermoplastic Polyurethane</b> (TPU Compound) which is a non-ionomeric thermoplastic elastomer.</p> <p>ESTANE 58133 has a <b>Shore D hardness of 55</b>, see Exhibit J (ESTANE Thermoplastic Polyurethane Product Data Sheet)</p> <p>See below for Shore D hardness of 64 or less limitation explanation.</p>

As mentioned above, Nesbitt incorporates by reference Molitor '637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor '637. Examples 1-7 use a ratio of SURLYN 1605 and

Application/Control Number: 95/000,122

Page 133

Art Unit: 3993

SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the '981 Patent has "from **about 5[%] to about 15% by weight of unsaturated carboxylic acid.**" '981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been "redesignated" as SURLYN 8940 and SURLYN 1557 has been "redesignated" as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan '873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt's first (inner) layer and is a sodium ion based low acid "(less than or equal to 15 weight percent methacrylic acid) **ionomer resin having a flexural modulus of about 51,000 psi.**" See '873 Patent, col. 2, ll. 43-50. Moreover, as shown in the "Properties Grid for Selected Industrial Grades of SURLYN" SURLYN 9650's ordinate compared to the other grades of SURLYN is toward the "Low % Acid" side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor '637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid.

Also, as mentioned above, Molitor '637 teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133. A review of the scientific literature yields that ESTANE 58133 has an inherent Shore D hardness of 55, see Exhibit J "ESTANE 58133 TPU Product Data Sheet". A Shore D hardness of 55 is within the range claimed of Shore D hardness less than 64. Therefore, Molitor '637's teaching of using ESTANE 58133 inherently meets the claim limitation of providing a outer cover layer of polyurethane material having a Shore hardness of less than 64. Moreover, Molitor '637 teaches a list of materials that may adapted for use in the invention:

Application/Control Number: 95/000,122

Page 134

Art Unit: 3993

Homopolymeric and copolymeric substances, such as (1) vinyl resins formed by the polymerization of vinyl chloride or by the copolymerization of vinyl chloride with unsaturated polymerizable compounds, e.g., vinyl esters; (2) polyolefins such as polyethylene, polypropylene, polybutylene, transpolyisoprene, and the like, including copolymers of polyolefins; (3) polyurethanes such as are prepared from polyols and organic polyisocyanates; (4) polyamides such as polyhexamethylene; (5) polystyrene, high impact polystyrene, styrene acrylonitrile copolymer and ABS, which is acrylonitrile, butadiene styrene copolymer; (6) acrylic resins as exemplified by the copolymers of methylmethacrylate, acrylonitrile, and styrene, etc.; (7) thermoplastic rubbers such as the urethanes, copolymers of ethylene and propylene, and transpolyisoprene, block copolymers of styrene and cispolybutadiene, etc.; and (8) polyphenylene oxide resins, or a blend with high impact polystyrene known by the trade name "Noryl."

See Molitor '637, col. 5, ll. 33-50.

In addition, Nesbitt discloses its outer layer was made from SURLYN 1855 (now SURLYN 9020). This material had inherently flexural modulus of about 14,000 psi and a Shore hardness of 55, see Exhibit I "Typical Properties for Selected Grades of SURLYN". Moreover, as admitted by the inventor Sullivan of the '873 patent, golf ball designers knew that the mechanical properties of the materials used as a golf-ball cover layer were more critical to golf ball performance than the actual materials themselves, see Exhibit G at 334.

Ground 36: Patent Owner's Argument received 30 April 2007

The Patent Owner does not argue this rejection.

Ground 36: Third Party Requester's Comments received 30 May 2007

The Third Party Requester's arguments for this claim are the same as given *supra* at "Ground 3: Third Party Requester's Comments."

Application/Control Number: 95/000,122

Page 135

Art Unit: 3993

Ground 36: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Upon review, the Examiner agrees with the argument of the Third Party Requester and adopts the suggested rejection of this claim with Nesbitt with Molitor '637 incorporated by reference. See "Ground 3: Examiner's Response to the Argument and Comments," *supra*.

**Proposed Third Party Requester Rejection: Ground #37.**

In the alternative, the requester submits on pages 69-72 in the request that claim 6 is unpatentable under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Molitor '637.

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt in view of Molitor '637, as evidenced by Exhibit I (SURLYN Thermoplastic Resins Product Information Sheet) and Exhibit J (ESTANE 58133 Product Specification Sheet.)

Below is a claim chart identifying the claim limitations and which reference Nesbitt or Molitor '637 discloses, teaches or suggests the claim limitations.

Claim 6	Nesbitt (primary) with Molitor '637 (teaching)
A multi-layer golf ball comprising:	<p>"The disclosure embraces <b>a golf ball</b> and method of making the same..." (Nesbitt, Abstract and FIGS. 1 &amp; 2.)</p> <p>"The present invention relates to golf balls and, more particularly, to improved golf balls comprising <b>multi-layer covers</b> which have a hard inner layer and a relatively soft outer layer." (Nesbitt, col. 1, lines 14-17.)</p>
a spherical core;	"Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or <b>core</b>

Application/Control Number: 95/000,122

Page 136

Art Unit: 3993

	form as a solid body of resilient polymeric material or rubber-like material in the shape of a <b>sphere</b> .” (Nesbitt, col. 2, ll. 31-34.)
an inner cover layer molded over said spherical core to form a spherical intermediate ball,	<p>“Disposed on the spherical center or core 12 is a first layer, lamination, ply or <b>inner cover</b> 14 of molded hard, highly flexural modulus resinous material...” (Nesbitt, col. 2, ll. 34-37.)</p> <p>“The multi-layered cover 12 comprises two layers: a first or inner layer or ply 14 .... The inner layer can be ionomer, ionomer blends ....” (Nesbitt, col. 5, lines 6-9.)</p>
said inner cover layer having a Shore D hardness of 60 or greater	<p><u>Nesbitt</u>: “[I]nner cover 14 of <b>molded hard</b>, high flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. Dupont de Nemours.” (Nesbitt, col. 2, ll. 36-38.)</p> <p><u>Per the ‘130 Patent</u>: “Type 1605 SURLYN (now designated SURLYN 8940).” (‘130 Patent, col. 2, ll. 46-47.)</p> <p><u>Exhibit I</u>: SURLYN 8940 has a <b>Shore D hardness of 65</b>.</p>
and comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	<p><u>Nesbitt</u>: “Reference is made to the application Ser. No. 155,658 of Robert P. <b>Molitor</b> issues into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers 14 ... for the golf ball of this invention.” (Nesbitt, col. 3, ll. 54-60.)</p> <p><u>Molitor ‘637</u>: Molitor teaches, in examples 1-7, cover materials including a blend of two <b>ionomer resins</b>: SURLYN 1605 and SURLYN 1557. (Molitor ‘637, col. 14, l. 22 to col. 16, l. 34.)</p> <p>See below for further explanation of how the % by weight and chemical composition limitations are taught.</p>
and having a modulus of from about 15,000 to about 70,000 psi;	See below.

Application/Control Number: 95/000,122

Page 137

Art Unit: 3993

an outer cover layer molded about said spherical intermediate ball to form a multi-layer golf ball,	"An <b>outer</b> layer, ply, lamination or <b>cover</b> 16 ... is then remolded onto the inner play or layer 14 ..." (Nesbitt, col. 2, ll. 43-47.)
the outer layer comprising a non-ionomeric elastomer selected from the group consisting of polyester elastomer, polyester, polyether polyurethane and polyester amide,	<p><u>Nesbitt</u>: "Reference is made to application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.)</p> <p>Molitor '637: In examples 16 and 17 teaches an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133.</p>
said outer cover layer having a modulus in the range of about 1,000 to about 30,000 psi	<p>"An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner ply or layer 14 ...." (Nesbitt, col. 2, lines 43-47.)</p> <p><u>Nesbitt</u>: Teaches Surlyn® 1855 (now Surlyn® 9020) which has a flexural modulus of about 14,000 psi.</p> <p><u>Exhibit J</u>: Estane 58133 Product Information: ESTANE 58133 has a modulus of 25,000 psi.</p>
and a Shore D hardness of 64 or less.	<p><u>Nesbitt</u>: "Reference is made to the application Ser. No. 155,658 of Robert P. <b>Molitor</b> issues into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for one or both layers 14 and 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.)</p> <p><u>Molitor '637</u>: Teaches cover materials including "polyurethanes such as are prepared from polyols and organic polyisocyanates"; specifically teaches Estane 58133 thermoplastic polyurethane. (Molitor '637, col. 5, lines 39-41; col. 18, lines 31-59 (examples 16 and 17).)</p> <p><u>Exhibit J</u>: ESTANE 58133 is a Polyester-Type <b>Thermoplastic Polyurethane</b> (TPU Compound) which is a non-ionomeric thermoplastic elastomer.</p>

Application/Control Number: 95/000,122

Page 138

Art Unit: 3993

	<p>ESTANE 58133 has a <b>Shore D hardness of 55</b>, see Exhibit J (ESTANE Thermoplastic Polyurethane Product Data Sheet)</p> <p>See below for Shore D hardness of 64 or less limitation explanation.</p>
--	---

As mentioned above, Nesbitt references Molitor '637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor '637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the '981 Patent has "from **about 5[%] to about 15% by weight of unsaturated carboxylic acid.**" '981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been "redesignated" as SURLYN 8940 and SURLYN 1557 has been "redesignated" as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan '873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt's first (inner) layer and is a sodium ion based low acid "(less than or equal to 15 weight percent methacrylic acid) **ionomer resin having a flexural modulus of about 51,000 psi.**" See '873 Patent, col. 2, ll. 43-50. Moreover, as shown in the "Properties Grid for Selected Industrial Grades of SURLYN" SURLYN 9650's ordinate compared to the other grades of SURLYN is toward the "Low % Acid" side of the graph. Thus, based on this evidence, Nesbitt referencing Molitor '637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid.



Application/Control Number: 95/000,122

Page 139

Art Unit: 3993

Also, as mentioned above, Molitor '637 teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133. A review of the scientific literature yields that ESTANE 58133 has an inherent Shore D hardness of 55, see Exhibit J "ESTANE 58133 TPU Product Data Sheet". A Shore D hardness of 55 is within the range claimed of Shore D hardness less than 64. Therefore, Molitor '637's teaching of using ESTANE 58133 inherently meets the claim limitation of providing a outer cover layer of polyurethane material having a Shore hardness of less than 64. Moreover, Molitor '637 teaches a list of materials that may adapted for use in the invention:

Homopolymeric and copolymeric substances, such as (1) vinyl resins formed by the polymerization of vinyl chloride or by the copolymerization of vinyl chloride with unsaturated polymerizable compounds, e.g., vinyl esters; (2) polyolefins such as polyethylene, polypropylene, polybutylene, transpolyisoprene, and the like, including copolymers of polyolefins; (3) polyurethanes such as are prepared from polyols and organic polyisocyanates; (4) polyamides such as polyhexamethylene; (5) polystyrene, high impact polystyrene, styrene acrylonitrile copolymer and ABS, which is acrylonitrile, butadiene styrene copolymer; (6) acrylic resins as exemplified by the copolymers of methylmethacrylate, acrylonitrile, and styrene, etc.; (7) thermoplastic rubbers such as the urethanes, copolymers of ethylene and propylene, and transpolyisoprene, block copolymers of styrene and cispolybutadiene, etc.; and (8) polyphenylene oxide resins, or a blend with high impact polystyrene known by the trade name "Noryl."

See Molitor '637, col. 5, ll. 33-50.

In addition, Nesbitt discloses its outer layer was made from SURLYN 1855 (now SURLYN 9020). This material had inherently flexural modulus of about 14,000 psi and a Shore hardness of 55, see Exhibit I "Typical Properties for Selected Grades of SURLYN". Moreover, as admitted by the inventor Sullivan of the '873 patent, golf ball designers knew that the

Application/Control Number: 95/000,122

Page 140

Art Unit: 3993

mechanical properties of the materials used as a golf-ball cover layer were more critical to golf ball performance than the actual materials themselves, see Exhibit G at 334.

Thus, because it appears that to one of ordinary skill in the art at the time the invention was created that the actual chemical composition of the material is not critical to the practice of the invention with respect to its mechanical performance, i.e. its “click and feel” for a golfer, one of ordinary skill in the art at the time the invention was made would find it obvious to substitute one material for another material if both materials had substantially the same mechanical properties.

This rejection of claim 6 based on Nesbitt in view of Molitor ‘637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Ground 37: Patent Owner’s Argument received 30 April 2007

The Patent Owner does not specifically argue this rejection. The argument is that given at “Ground 4: Patent Owner’s Argument” and “Ground 24: Patent Owner’s Argument,” *supra*.

Ground 37: Third Party Requester’s Comments received 30 May 2007

The Third Party Requester’s counter arguments for this claim are the same as given *supra* at “Ground 4: Third Party Requester’s Comments” and “Ground 24: Third Party Requester’s Comments.”

Application/Control Number: 95/000,122

Page 141

Art Unit: 3993

Ground 37: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner agrees with the proposed rejection of the Third Party Requester, and the rejection of claim 6 under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Molitor '637 is maintained.. For the response see "Ground 4: Examiner's Response to the Argument and Comments" and "Ground 24: Examiner's Response to the Argument and Comments," *supra*.

**Proposed Third Party Requester Rejection: Ground #38.**

The requester submits on pages 72-74 in the request that claim 6 is unpatentable under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Wu.

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt mentioning Molitor '637 in view of Wu, as evidenced by Exhibit C.

Below is a claim chart identifying the claim limitations and which reference Nesbitt or Wu discloses, teaches or suggests the claim limitations. As reported in the Decision of 04-06-06 granting reexamination, it needs to be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane materials, which are non-ionomeric thermoset materials, for the use as an outer layer.

Claim 6	Nesbitt (primary) mentioning Molitor '637 with Wu (teaching)
A multi-layer golf ball comprising:	<p>"The disclosure embraces a <b>golf ball</b> and method of making the same..." (Nesbitt, Abstract and FIGS. 1 &amp; 2.)</p> <p>"The present invention relates to golf balls and, more particularly, to improved golf balls comprising <b>multi-layer covers</b> which have a hard inner layer and a relatively soft outer layer." (Nesbitt, col. 1, lines 14-</p>

Application/Control Number: 95/000,122

Page 142

Art Unit: 3993

	17.)
a spherical core;	<p>“Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or <b>core</b> form as a solid body of resilient polymeric material or rubber-like material in the shape of a <b>sphere</b>.” (Nesbitt, col. 2, ll. 31-34.)</p>
an inner cover layer molded over said spherical core to form a spherical intermediate ball,	<p>“Disposed on the spherical center or core 12 is a first layer, lamination, ply or <b>inner cover</b> 14 of molded hard, highly flexural modulus resinous material...” (Nesbitt, col. 2, ll. 34-37.)</p> <p>“The multi-layered cover 12 comprises two layers: a first or inner layer or ply 14 .... The inner layer can be ionomer, ionomer blends ....” (Nesbitt, col. 5, lines 6-9.)</p>
said inner cover layer having a Shore D hardness of 60 or greater	<p><u>Nesbitt</u>: “[I]nner cover 14 of <b>molded hard</b>, high flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. Dupont de Nemours.” (Nesbitt, col. 2, ll. 36-38.)</p> <p><u>Per the ‘130 Patent</u>: “Type 1605 SURLYN (now designated SURLYN 8940).” (‘130 Patent, col. 2, ll. 46-47.)</p> <p><u>Exhibit I</u>: SURLYN 8940 has a <b>Shore D hardness of 65</b>.</p>
and comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	<p><u>Nesbitt</u>: “Reference is made to the application Ser. No. 155,658 of Robert P. <b>Molitor</b> issues into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers 14 ... for the golf ball of this invention.” (Nesbitt, col. 3, ll. 54-60.)</p> <p><u>Molitor ‘637</u>: Molitor teaches, in examples 1-7, cover materials including a blend of two <b>ionomer resins</b>: SURLYN 1605 and SURLYN 1557. (Molitor ‘637, col. 14, l. 22 to col. 16, l. 34.)</p> <p>See below for further explanation of how the % by weight and chemical composition limitations are taught.</p>

Application/Control Number: 95/000,122

Page 143

Art Unit: 3993

and having a modulus of from about 15,000 to about 70,000 psi;	See below.
an outer cover layer molded about said spherical intermediate ball to form a multi-layer golf ball,	<p>"An <b>outer</b> layer, ply, lamination or <b>cover</b> 16 ... is then remolded onto the inner play or layer 14 ..." (Nesbitt, col. 2, ll. 43-47.)</p> <p><u>Wu</u>: "Preferably, a golf ball is made in accordance with the present invention by molding a cover about a core wherein the cover is formed from a polyurethane composition comprising a polyurethane prepolymer and a slow-reacting polyamine curing agent or a difunctional glycol." (Wu, col. 3, ll. 62-66.)</p>
the outer layer comprising a non-ionomeric elastomer selected from the group consisting of polyester elastomer, polyester, polyether polyurethane and polyester amide,	<p><u>Nesbitt</u>: "Reference is made to application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.)</p> <p>Molitor '637: In examples 16 and 17 teaches an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133.</p> <p><u>Wu</u>: "[t]he present invention is a golf ball product made from a polyurethane prepolymer cured with a slow-reacting curing agent selected from the group of slow-reacting polyamine curing agents or difunctional glycols. The term "golf ball product" as used in the specification and claims means a cover, a core, a center or a one-piece golf ball. The cover of a golf ball made in accordance with the present invention has been found to have good shear resistance, cut resistance, durability and resiliency. <b>Preferably, the polyurethane composition of the present invention is used to made the cover of a golf ball.</b>" (Wu, col. 2, ll. 33-44.)</p>
said outer cover layer having a modulus in the range of about 1,000 to about 30,000 psi	"An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner ply or layer 14 ...." (Nesbitt, col. 2, lines 43-47.)

Application/Control Number: 95/000,122

Page 144

Art Unit: 3993

	<p><u>Nesbitt</u>: Teaches Surlyn® 1855 (now Surlyn® 9020) which has a flexural modulus of about 14,000 psi.</p> <p><u>Exhibit J</u>: Estane 58133 Product Information: ESTANE 58133 has a modulus of 25,000 psi.</p>
and a Shore D hardness of 64 or less.	<p><u>Nesbitt</u>: "Reference is made to the application Ser. No. 155,658 of Robert P. <b>Molitor</b> issues into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for one or both layers 14 and 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.)</p> <p><u>Molitor '637</u>: Teaches cover materials including "polyurethanes such as are prepared from polyols and organic polyisocyanates"; specifically teaches Estane 58133 thermoplastic polyurethane. (Molitor '637, col. 5, lines 39-41; col. 18, lines 31-59 (examples 16 and 17).)</p> <p><u>Exhibit J</u>: ESTANE 58133 is a Polyester-Type <b>Thermoplastic Polyurethane</b> (TPU Compound) which is a non-ionomeric thermoplastic elastomer.</p> <p>ESTANE 58133 has a <b>Shore D hardness of 55</b>, see Exhibit J (ESTANE Thermoplastic Polyurethane Product Data Sheet)</p> <p>See below for Shore D hardness of 64 or less limitation explanation.</p> <p><u>Wu</u>: "With polyurethanes made in accordance with the present invention, the degree of cure which has taken place is dependent upon, <i>inter alia</i>, the time, temperature, type of curative, and amount of catalyst used. It has been found that the degree of cure of the cover composition is directly proportional to the hardness of the composition. A hardness of about 10D to 30D, Shore D hardness for the cover stock at the end of the intermediate curing step (i.e. just prior to the final molding step) has been found to be suitable for the present invention, More preferred is a hardness of about 12D to 20D." (Wu, col. 6, ll. 27-38.)</p>

Application/Control Number: 95/000,122

Page 145

Art Unit: 3993

	See below for more explanation of how Wu teaches and/or suggests the Shore D hardness of 64 or less limitation explanation.
--	---

As mentioned above, Nesbitt mentioning Molitor '637 teaches the use of particular polyurethane materials for the use as an outer layer. Wu teaches that polyurethane was being used as the outer layer of golf ball *circa* 1993. Wu further teaches in col. 1:36-46 that SURLYN covered golf balls lack the "click" and "feel" of balata which golfers have become accustomed to such sensations and polyurethane covered golf balls can be made to have a similar "click" and "feel" of balata. Wu also at least teaches that polyurethanes made according to its invention will have Shore D hardness directly proportional to the degree of cure of the cover; and this Shore D hardness ranges from 10 to 30, preferably 12 to 20 on the Shore D scale, see col. 6:26-38. This teaching of Shore D hardness is directed to an intermediate curing step product prior to the final molding process to finish the golf ball. Exhibit C demonstrates the actual finished golf ball product having the cover layer that Wu teaches within its disclosure. Exhibit C teaches that the golf ball taught therein is covered by the following patents: 4,783,078; 4,846,910; 4,858,923; 4,904,320; 4,915,390; 5,007,594; 5,080,367; 5,133,509; **5,334,673**; and D339,074. The '673 Patent teaches the cover sock of the Exhibit C finished golf ball. Exhibit C teaches that the golf ball taught therein has a cover material made from an "elastomer", having a thickness of .050", and 58 Shore D hardness. All three properties are within the range of mechanical properties of the claim invention (polyurethane is an elastomer, cover layer thickness ranges from 0.010 to 0.070 inches and the Shore D hardness is less than 64). Because it has been admitted by the

Application/Control Number: 95/000,122

Page 146

Art Unit: 3993

inventor of the Sullivan '893 patent that the particular chemical properties of the materials (the chemical composition) used in the construction of a golf ball lack criticality as compared to the mechanical properties (the Shore D hardness, flexural modulus, layer thickness) of those compounds used for constructing the different layers (Exhibit G at 334), one of ordinary skill in the art at the time the invention was made would find it obvious to incorporate the teachings of Wu which inherently include the teachings of Shore hardness for the fully cured cover layer as taught in Exhibit C as obvious equivalent materials in order to achieve the same end result of providing a cover layer that has the same "click" and "feel" of a balata cover which the extra durability of an elastomeric material.

This rejection of claim 6 based on Nesbitt mentioning Molitor '637 in view of Wu was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Ground 38: Patent Owner's Argument received 30 April 2007

The Patent Owner does not specifically argue this rejection. The argument is that given at "Ground 5: Patent Owner's Argument" and "Ground 25: Patent Owner's Argument," *supra*.

Ground 38: Third Party Requester's Comments received 30 May 2007

The Third Party Requester's counter arguments for this claim are the same as given *supra* at "Ground 5: Third Party Requester's Comments" and "Ground 25: Third Party Requester's Comments."



Application/Control Number: 95/000,122

Page 147

Art Unit: 3993

Ground 38: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner agrees with the proposed rejection of the Third Party Requester, and the rejection of claim 6 under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Molitor '637 is maintained. For the response see "Ground 5: Examiner's Response to the Argument and Comments" and "Ground 25: Examiner's Response to the Argument and Comments" *supra*.

**Proposed Third Party Requester Rejection: Ground #39.**

The requester submits on pages 74-76 in the request that claim 6 is unpatentable under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view of Molitor '751.

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Nesbitt mentioning Molitor '637 in view of Molitor '751.

Below is a claim chart identifying the claim limitation and where Nesbitt and/or Molitor '637 disclose, teach or suggest the claim limitations. As reported in the Decision granting reexamination, it needs to be correctly stated on the record that Nesbitt and Molitor '637 which is mentioned in Nesbitt teach the use of particular polyurethane material for the use as an outer layer.

Claim 6	Nesbitt (primary) mentioning Molitor '637
A multi-layer golf ball comprising:	<p>"The disclosure embraces a <b>golf ball</b> and method of making the same..." (Nesbitt, Abstract and FIGS. 1 &amp; 2.)</p> <p>"The present invention relates to golf balls and, more particularly, to improved golf balls comprising <b>multi-layer covers</b> which have a hard inner layer and a relatively soft outer layer." (Nesbitt, col. 1, lines 14-</p>

Application/Control Number: 95/000,122

Page 148

Art Unit: 3993

	17.)
a spherical core;	<p>“Referring to the drawings in detail there is illustrated a golf ball 10 which comprises a solid center or <b>core</b> form as a solid body of resilient polymeric material or rubber-like material in the shape of a <b>sphere</b>.” (Nesbitt, col. 2, ll. 31-34.)</p>
an inner cover layer molded over said spherical core to form a spherical intermediate ball,	<p>“Disposed on the spherical center or core 12 is a first layer, lamination, ply or <b>inner cover</b> 14 of molded hard, highly flexural modulus resinous material...” (Nesbitt, col. 2, ll. 34-37.)</p> <p>“The multi-layered cover 12 comprises two layers: a first or inner layer or ply 14 .... The inner layer can be ionomer, ionomer blends ....” (Nesbitt, col. 5, lines 6-9.)</p>
said inner cover layer having a Shore D hardness of 60 or greater	<p><u>Nesbitt</u>: “[I]nner cover 14 of <b>molded hard</b>, high flexural modulus resinous material such as type 1605 SURLYN marketed by E.I. Dupont de Nemours.” (Nesbitt, col. 2, ll. 36-38.)</p> <p><u>Per the ‘130 Patent</u>: “Type 1605 SURLYN (now designated SURLYN 8940).” (‘130 Patent, col. 2, ll. 46-47.)</p> <p><u>Exhibit I</u>: SURLYN 8940 has a <b>Shore D hardness of 65</b>.</p>
and comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	<p><u>Nesbitt</u>: “Reference is made to the application Ser. No. 155,658 of Robert P. <b>Molitor</b> issues into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers 14 ... for the golf ball of this invention.” (Nesbitt, col. 3, ll. 54-60.)</p> <p><u>Molitor ‘637</u>: Molitor teaches, in examples 1-7, cover materials including a blend of two <b>ionomer resins</b>: SURLYN 1605 and SURLYN 1557. (Molitor ‘637, col. 14, l. 22 to col. 16, l. 34.)</p> <p>See below for further explanation of how the % by weight and chemical composition limitations are taught.</p>

Application/Control Number: 95/000,122

Page 149

Art Unit: 3993

and having a modulus of from about 15,000 to about 70,000 psi;	See below.
an outer cover layer molded about said spherical intermediate ball to form a multi-layer golf ball,	"An <b>outer</b> layer, ply, lamination or <b>cover</b> 16 ... is then remolded onto the inner play or layer 14 ..." (Nesbitt, col. 2, ll. 43-47.)
the outer layer comprising a non-ionomeric elastomer selected from the group consisting of polyester elastomer, polyester, polyether polyurethane and polyester amide,	<p><u>Nesbitt</u>: "Reference is made to application Ser. No. 155,658 of Robert P. Molitor issued into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for ... layers ... 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.)</p> <p>Molitor '637: In examples 16 and 17 teaches an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133.</p>
said outer cover layer having a modulus in the range of about 1,000 to about 30,000 psi	<p>"An outer layer, ply, lamination or cover 16 of comparatively soft, low flexural modulus resinous material ... is then re-molded onto the inner ply or layer 14 ...." (Nesbitt, col. 2, lines 43-47.)</p> <p><u>Nesbitt</u>: Teaches Surlyn® 1855 (now Surlyn® 9020) which has a flexural modulus of about 14,000 psi.</p> <p>Exhibit J: Estane 58133 Product Information: ESTANE 58133 has a modulus of 25,000 psi.</p>
and a Shore D hardness of 64 or less.	<p><u>Nesbitt</u>: "Reference is made to the application Ser. No. 155,658 of Robert P. <b>Molitor</b> issues into U.S. Pat. No. 4,274,637 which describes a number of foamable compositions of a character which may be employed for one or both layers 14 and 16 for the golf ball of this invention." (Nesbitt, col. 3, ll. 54-60.)</p> <p><u>Molitor '637</u>: Teaches cover materials including "polyurethanes such as are prepared from polyols and organic polyisocyanates"; specifically teaches Estane 58133 thermoplastic polyurethane. (Molitor '637, col. 5, lines 39-41; col. 18, lines 31-59 (examples 16 and 17).)</p>

Application/Control Number: 95/000,122

Page 150

Art Unit: 3993

	<p><u>Exhibit J:</u> ESTANE 58133 is a Polyester-Type <b>Thermoplastic Polyurethane</b> (TPU Compound) which is a non-ionic thermoplastic elastomer.</p> <p>ESTANE 58133 has a <b>Shore D hardness of 55</b>, see Exhibit J (ESTANE Thermoplastic Polyurethane Product Data Sheet)</p> <p>See below for Shore D hardness of 64 or less limitation explanation.</p>
--	--

As mentioned above, Nesbitt references Molitor '637 as describing an number of compositions suitable for the inner cover layer 14. Of particular interest in this case are Examples 1-7 within Molitor '637. Examples 1-7 use a ratio of SURLYN 1605 and SURLYN 1557. The use of SURLYN grades for golf ball covers is also disclosed in U.S. Pat. No. 4,690,981. The preferred composition in the '981 Patent has "from about 5[%] to about 15% by weight of unsaturated carboxylic acid." '981 Pat., col. 3, ll. 59-60. Those of ordinary skill in the art understand that SURLYN 1605 has been "redesignated" as SURLYN 8940 and SURLYN 1557 has been "redesignated" as SURLYN 9650, see e.g. U.S. Pat. No. 4,679,795, col. 6, ll. 10-15 and U.S. Pat. No. 5,150,906, col. 4, ll. 66. Furthermore, the Patent Owner in the Sullivan '873 Patent admitted that SURLYN 1605 is now designated as 8940 and was used in Nesbitt's first (inner) layer and is a sodium ion based low acid "(less than or equal to 15 weight percent methacrylic acid) **ionomer resin having a flexural modulus of about 51,000 psi.**" See '873 Patent, col. 2, ll. 43-50. Moreover, as shown in the "Properties Grid for Selected Industrial Grades of SURLYN" SURLYN 9650's ordinate compared to the other grades of SURLYN is toward the "Low % Acid" side of the graph. Thus, based on this evidence, Nesbitt referencing

Application/Control Number: 95/000,122

Page 151

Art Unit: 3993

Molitor '637 inherently teaches using as an inner layer at least one ionomer resin having no more than 16% by weight of alpha, beta-unsaturated carboxylic acid.

Also, Molitor '637 teaches in TABLE 10 an outer layer made from a thermoplastic polyurethane identified as ESTANE 58133. A review of the scientific literature yields that ESTANE 58133 has an inherent Shore D hardness of 55, see Exhibit J "ESTANE 58133 TPU Product Data Sheet". A Shore D hardness of 55 is within the range claimed of Shore D hardness less than 64. Therefore, Molitor '637's teaching of using ESTANE 58133 inherently meets the claim limitation of providing a outer cover layer of polyurethane material having a Shore hardness of less than 64. Moreover, Molitor '637 teaches a list of materials that may adapted for use in the invention:

Homopolymeric and copolymeric substances, such as (1) vinyl resins formed by the polymerization of vinyl chloride or by the copolymerization of vinyl chloride with unsaturated polymerizable compounds, e.g., vinyl esters; (2) polyolefins such as polyethylene, polypropylene, polybutylene, transpolyisoprene, and the like, including copolymers of polyolefins; (3) polyurethanes such as are prepared from polyols and organic polyisocyanates; (4) polyamides such as polyhexamethylene; (5) polystyrene, high impact polystyrene, styrene acrylonitrile copolymer and ABS, which is acrylonitrile, butadiene styrene copolymer; (6) acrylic resins as exemplified by the copolymers of methylmethacrylate, acrylonitrile, and styrene, etc.; (7) thermoplastic rubbers such as the urethanes, copolymers of ethylene and propylene, and transpolyisoprene, block copolymers of styrene and cispolybutadiene, etc.; and (8) polyphenylene oxide resins, or a blend with high impact polystyrene known by the trade name "Noryl."

See Molitor '637, col. 5, ll. 33-50.

As shown above in the claim chart, Nesbitt mentioning Molitor '673 suggests the use of a soft outer cover layer including a polyurethane material. In an analogous golf ball, Molitor '751 teaches that:

Application/Control Number: 95/000,122

Page 152

Art Unit: 3993

It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core **a cover having a shore C hardness less than 85, preferably 70-80, and most preferably 72-76.** The novel cover of the golf ball of the invention is made of a composition comprising a blend of **(1) a thermoplastic urethane having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55.**

(Molitor '751, col. 2, ll.33-49 (emphasis added)).

Moreover, in explaining what constitutes a two-piece golf ball, Molitor '751 teaches that:

The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, **but also includes balls having a separate solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt, and other balls have non-wound cores.**

(Molitor '751, col. 3, ll. 7-12 (emphasis added)).

As stated above, Molitor '751 teaches the cover of the golf ball has a Shore C hardness of less than 85, preferably 70-80, most preferably 72-76. As described in Molitor '751's TABLE bridging columns 7 and 8, Sample 8 constitutes one of the preferred embodiments and its cover is taught to have a Shore C hardness of 73. Patent Owner has admitted that a Shore C hardness of 73 is equal to a Shore D hardness of 47, see U.S. Pat. No. 6,905,648, Table 19 (Exhibit L). Thus, a cover having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

How one of ordinary skill in the art would discover this inherent mechanical property of Shore D hardness for the polyurethane material used in Molitor '751 is by "translating" a Shore C value to a Shore D value for the polyurethane material. How one of ordinary skill in the art "translates" a Shore C value to a Shore D value is by taking the known Shore hardness values with a given range, in this instance Shore C, for given materials, in this instance polyurethane golf ball covers materials, and taking corresponding measurements with a different set of Shore gauges, in this instance Shore D (but could also be Shore A). A resulting trendline plot occurs

Application/Control Number: 95/000,122

Page 153

Art Unit: 3993

from performing this procedure wherein the range of known Shore C values are the abscissa and the range of measured Shore D values are the ordinate. Then, said plot can be use to read equivalent Shore D value for any given Shore C value within the known range of Shore C. This is how one of ordinary skill in the art can know the equivalent Shore D or even Shore A hardness value for any given Shore C hardness value.

As stated in the request on page 28

It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the soft non-ionomeric polymeric outer cover layer incorporated by Nesbitt and replace it with an outer cover layer made of the soft polyurethane material taught by Molitor '751 to provide a golf ball that includes "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, ll. 61-68)

Moreover, because it appears that to one of ordinary skill in the art at the time the invention was created that the actual chemical composition of the material is not critical to the practice of the invention with respect to its mechanical performance, i.e. its "click and feel" for a golfer, one of ordinary skill in the art at the time the invention was made would find it obvious to substitute one material for another material if both materials had substantially the same mechanical properties.

This rejection of claim 6 based on Nesbitt mentioning Molitor '637 in view of Molitor '751 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Ground 39: Patent Owner's Argument received 30 April 2007

Application/Control Number: 95/000,122

Page 154

Art Unit: 3993

The Patent Owner does not specifically argue this rejection. The argument is that given at “Ground 6: Patent Owner’s Argument” and “Ground 26: Patent Owner’s Argument,” *supra*.

Ground 39: Third Party Requester’s Comments received 30 May 2007

The Third Party Requester’s counter arguments for this claim are the same as given *supra* at “Ground 6: Third Party Requester’s Comments” and “Ground 26: Third Party Requester’s Comments.”

Ground 39: Examiner’s Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner agrees with the proposed rejection of the Third Party Requester, and the rejection of claim 6 under 35 U.S.C. § 103(a) as being obvious by Nesbitt in view Molitor ‘751 is maintained.. For the response see “Ground 6: Examiner’s Response to the Argument and Comments” and “Ground 26: Examiner’s Response to the Argument and Comments,” *supra*.

**Proposed Third Party Requester Rejection: Ground #40.**

The requester submits on pages 76-80 in the request that claim 6 is unpatentable under 35 U.S.C. § 103 as being obvious over Proudfit in view of Molitor ‘637.

Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Proudfit in view of Molitor ‘637.

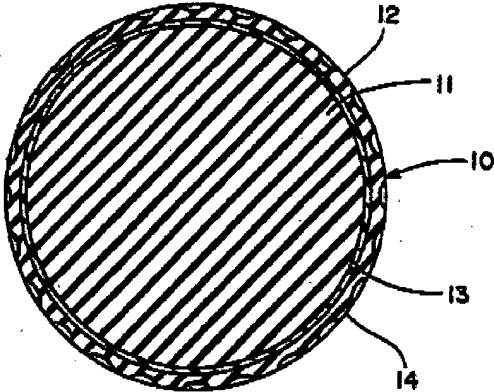
Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests the claim limitations.



Application/Control Number: 95/000,122

Page 155

Art Unit: 3993

Claim 6	Proudfit								
A multi-layer golf ball comprising:	"This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover." (col. 1, lines 11-12.)								
a spherical core;	 <p>"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 [in the same of a sphere] and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material. (col. 7, lines 21-24; FIGS 1, 2.) "Two specific solid core compositions used with the new two- layer cover had the composition described in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (col. 7, lines 51-55.)</p>								
an inner cover layer molded over said spherical core to form a spherical intermediate ball,	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)								
said inner cover layer having a Shore D hardness of 60 or greater	<p>The composition of the inner cover layer is described in Table 6.</p> <table border="1"> <caption>TABLE 6</caption> <thead> <tr> <th colspan="2">Composition of Inner Layer of Cover (Parts by Weight)</th> </tr> <tr> <th>Ionomer Type</th> <th>Blend Ratio</th> </tr> </thead> <tbody> <tr> <td>Sodium- Surlyn 8940</td> <td>75%</td> </tr> <tr> <td>Zinc- Surlyn 9910</td> <td>25%</td> </tr> </tbody> </table> <p>(Proudfit, col. 8, ll. 22-30.)</p> <p>SURLYN 8940 has a Shore D hardness of 65;</p>	Composition of Inner Layer of Cover (Parts by Weight)		Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Composition of Inner Layer of Cover (Parts by Weight)									
Ionomer Type	Blend Ratio								
Sodium- Surlyn 8940	75%								
Zinc- Surlyn 9910	25%								

Application/Control Number: 95/000,122

Page 156

Art Unit: 3993

	<p>SURLYN 9910 has a <b>Shore D hardness of 64</b>, see Exhibit I. Therefore, this cover blend has a hardness of 60 or more because materials used to make this inner layer have Shore hardness greater than 60.</p> <p>“The inner layer can be molded in one of two methods:</p> <ol style="list-style-type: none"> <li>1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core.</li> <li>2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core.” (Proudfit, col. 8, ll. 32-38.)</li> </ol>						
and comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	<p>“The inner layer can be molded in one of two methods:</p> <ol style="list-style-type: none"> <li>1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core.</li> <li>2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core.” (Proudfit, col. 8, ll. 32-38.)</li> </ol>						
and having a modulus of from about 15,000 to about 70,000 psi;	<p>The composition of the inner cover layer is described in Table 6.</p> <div style="text-align: center;"> <p><b>TABLE 6</b></p> <hr/> <p><b>Composition of Inner Layer of Cover</b> (Parts by Weight)</p> <hr/> <table> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </table> <hr/> </div> <p>(Proudfit, col. 8, ll. 22-30.)</p> <p>SURLYN 8940 and 9910 are both low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.</p> <p>Proudfit either incorporates by reference these chemical properties or the materials used within the Proudfit golf ball inherently have these chemical properties. For instance, Proudfit incorporates by reference U.S. Pat. No. 4,690,981 in the background of its invention. (Proudfit, col. 1, ll. 39-43.) The ‘981 Patent discloses the preferable amount of <b>unsaturated carboxylic acid is “from about 5[%] to about 15% by weight.”</b> (‘981 Patent, col. 3, ll. 59-60.) If Proudfit discloses using blends of SURLYN as the chemical for making the inner cover and the ‘981 Patent is the formulation for the ionomer known in the art as SURLYN, then inherently</p>	Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Ionomer Type	Blend Ratio						
Sodium- Surlyn 8940	75%						
Zinc- Surlyn 9910	25%						

Application/Control Number: 95/000,122

Page 157

Art Unit: 3993

	grades of SURLYN such as SURLYN 8940 and 9910 would be low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.																
an outer cover layer molded about said spherical intermediate ball to form a multi-layer golf ball,	<p>"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard Surlyns" in U.S. Patent No. 4,884,814.)" (col. 5, line 66-col. 6, line 1.)</p> <p>"Specific standard Surlyn resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc) ...." (col. 6, lines 6-7.)</p> <p>The composition of the inner cover layer is described in Table 6.</p> <table border="1"> <caption>TABLE 6 Composition of Inner Layer of Cover (Parts by Weight)</caption> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </table> <p>(Proudfit, col. 8, ll. 22-30.)</p>	Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%										
Ionomer Type	Blend Ratio																
Sodium- Surlyn 8940	75%																
Zinc- Surlyn 9910	25%																
the outer layer comprising a non-ionomeric elastomer selected from the group consisting of polyester elastomer, polyester, polyether polyurethane and polyester amide,	<p>"FIG 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises .... a relatively soft <b>outer layer</b> 14 of polymeric material." (Proudfit, col. 7, ll. 21-24.)</p> <p>"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (Proudfit, col. 5, ll. 15-17.) An example of this blend is disclose in Table 7 reproduced below.</p> <table border="1"> <caption>TABLE 7 Composition of Outer Layer (Parts by Weight)</caption> <tr> <td>Trans Polyisoprene (TP-301)</td><td>60.00</td></tr> <tr> <td>Polybutadiene</td><td>40.00</td></tr> <tr> <td>Zinc Oxide</td><td>5.00</td></tr> <tr> <td>Titanium Dioxide</td><td>11.00</td></tr> <tr> <td>Ultramarine Blue color</td><td>.50</td></tr> <tr> <td>Zinc DiAcrylate</td><td>35.00</td></tr> <tr> <td>Peroxide (Varox 230 XL)</td><td>2.50</td></tr> <tr> <td>Total</td><td>180.00</td></tr> </table> <p>Note that Trans PolyIsoprene is basically the chemical name for balata and Polybutadiene is one of the first types of synthetic rubber or elastomer. As described in</p>	Trans Polyisoprene (TP-301)	60.00	Polybutadiene	40.00	Zinc Oxide	5.00	Titanium Dioxide	11.00	Ultramarine Blue color	.50	Zinc DiAcrylate	35.00	Peroxide (Varox 230 XL)	2.50	Total	180.00
Trans Polyisoprene (TP-301)	60.00																
Polybutadiene	40.00																
Zinc Oxide	5.00																
Titanium Dioxide	11.00																
Ultramarine Blue color	.50																
Zinc DiAcrylate	35.00																
Peroxide (Varox 230 XL)	2.50																
Total	180.00																

Application/Control Number: 95/000,122

Page 158

Art Unit: 3993

	the Rule 132 Declaration of Edmund A. Hebert in paragraph 7, the outer cover layer disclosed in Proudfit is the outer cover layer for the golf ball disclosed in Exhibit A to the Rule 132 Declaration and that <b>cover has a Shore D hardness of 52</b> . Thus, Proudfit's outer layer cover inherently has a Shore D hardness of less than 64.
said outer cover layer having a modulus in the range of about 1,000 to about 30,000 psi	"A golf ball cover in accordance with the invention includes ... an outer layer of soft material such as balata or a blend of balata and other elastomers. Preferably, the outer layer is a blend of balata and a thermally crosslinkable elastomer such as polybutadiene. <b>The balata and elastomer are crosslinked [(an indication that the material is a thermosetting material)]</b> during the molding of the ball by a crosslinker such as zinc diacrylate and a crosslinking initiator such as organic peroxide rather than using the conventional sulfur and RR2 crystals curing system for balata covers. The outer layer of the cover is completely crosslinked when the ball is removed from the mold, and subsequent processing steps can be performed in the same manner as on SURLYN covered balls." (Proudfit, col. 5, ll. 17-27.)
and a Shore D hardness of 64 or less.	"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.) Also, see below.

As pointed out in the request on page 79 and 80:

While Proudfit may not expressly disclose the use of polyurethane as an outer cover material, it would have been obvious given that "[t]he patent literature is replete with proposed cover formulations seeking to improve upon the balata and ionomer covers [including] [p]olyurethane ...." (See Molitor '751, col. 2, lines 9-12.) Soft polyurethane materials had been known to be a substitute for balata covers for decades prior to the filing of the '130 patent.

For example, Molitor '637 discloses the use of polyurethane material as a soft polymeric material that may be used as an outer cover layer of a golf ball. (See Molitor '637, col. 5, lines 33-41; col. 18, Examples 16 and 17.) One exemplary polyurethane material used by Molitor as an outer cover material includes Estane 58133.

As was readily appreciated by those skilled in the art--including the inventor of the '130 patent--the types of materials used in a golf ball are not as critical to a golf ball's playability as are the mechanical properties of those materials. (See Exhibit G at 334.) The Estane 58133 is a relatively soft material and has a Shore D hardness of 55 and is

Application/Control Number: 95/000,122

Page 159

Art Unit: 3993

also a low flexural modulus material having a modulus of about 25,000 psi. (See Exhibit J.) Proudfit's outer cover layer is also relatively soft and has a flexural modulus between 20,000 and 25,000 psi. (Proudfit, col. 6, lines 28-31 .) Due to the similarities between these two materials, the ordinarily skilled artisan would have recognized the substitutability of these two materials as well as the benefits of using polyurethane as an outer cover material.

On page 80, the request concludes:

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the balata-based outer cover layer of Proudfit to include the Estane polyurethane outer cover layer material of Molitor '637 because such was a well known substitute to balata and gives a number of advantages over balata as would have been readily appreciated by those skilled in the art. These advantages include: (1) improved processability; (2) improved durability when compared to balata; (3) cost-effectiveness when compared to balata; and (4) having a good "click" and "feel." (See *supra* [regarding the what "click" and "feel" mean to a golfer]) All of this would have led one of ordinary skill in the art to replace the soft balata outer cover layer of Proudfit with the soft polyurethane outer cover layer of Molitor '637 at the time of the alleged invention.

This rejection of claim 6 based on Proudfit in view of Molitor '637 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Ground 40: Patent Owner's Argument received 30 April 2007

The Patent Owner does not specifically argue this rejection. The argument is that given at "Ground 1: Patent Owner's Argument" and "Ground 20: Patent Owner's Argument," *supra*.

Ground 40: Third Party Requester's Comments received 30 May 2007

The Third Party Requester's counter arguments for this claim are the same as given *supra* at "Ground 1: Third Party Requester's Comments" and "Ground 20: Third Party Requester's Comments."

Application/Control Number: 95/000,122

Page 160

Art Unit: 3993

Ground 40: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner agrees with the proposed rejection of the Third Party Requester, and the rejection of claim 6 under 35 U.S.C. § 103(a) as being obvious by Proudfit in view Molitor '637 is maintained.. For the response see "Ground 1: Examiner's Response to the Argument and Comments" and "Ground 20: Examiner's Response to the Argument and Comments," *supra*.

**Proposed Third Party Requester Rejection: Ground #41.**

The requester submits on pages 81-82 in the request that claim 6 is unpatentable under 35 U.S.C. § 103 as being obvious over Proudfit in view of Wu.

Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Proudfit in view of Wu.

Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests the claim limitations.

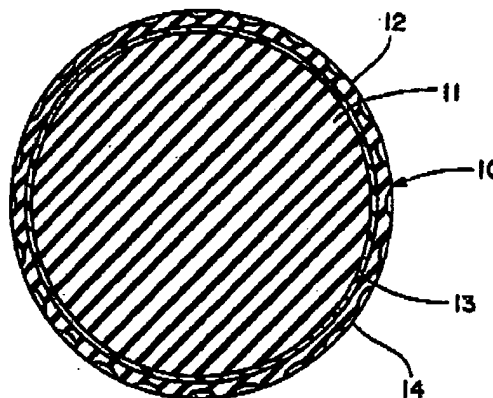
Claim 6	Proudfit
A multi-layer golf ball comprising:	"This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover." (col. 1, lines 11-12.)

Application/Control Number: 95/000,122

Page 161

Art Unit: 3993

a spherical core;



"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 [in the same of a sphere] and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material. (col. 7, lines 21-24; FIGS 1, 2.) "Two specific solid core compositions used with the new two-layer cover had the composition described in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (col. 7, lines 51-55.)

an inner cover layer molded over said spherical core to form a spherical intermediate ball,

"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)

said inner cover layer having a Shore D hardness of 60 or greater

The composition of the inner cover layer is described in Table 6.

TABLE 6	
Composition of Inner Layer of Cover (Parts by Weight)	
Ionomer Type	Blend Ratio
Ethlen- Surlyn 8940	75%
Zinc- Surlyn 9910	25%

(Proudfit, col. 8, ll. 22-30.)

SURLYN 8940 has a **Shore D hardness of 65**; SURLYN 9910 has a **Shore D hardness of 64**, see Exhibit I. Therefore, this cover blend has a hardness of 60 or more because materials used to make this inner layer have Shore hardness greater than 60.

Application/Control Number: 95/000,122

Page 162

Art Unit: 3993

	<p>"The inner layer can be molded in one of two methods:</p> <ol style="list-style-type: none"> <li>1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core.</li> <li>2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core." <p>(Proudfit, col. 8, ll. 32-38.)</p> </li></ol>						
and comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	<p>"The inner layer can be molded in one of two methods:</p> <ol style="list-style-type: none"> <li>1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core.</li> <li>2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core." <p>(Proudfit, col. 8, ll. 32-38.)</p> </li></ol>						
and having a modulus of from about 15,000 to about 70,000 psi;	<p>The composition of the inner cover layer is described in Table 6.</p> <div style="text-align: center;"> <p><b>TABLE 6</b></p> <hr/> <p>Composition of Inner Layer of Cover (Parts by Weight)</p> <hr/> <table> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </table> <hr/> </div> <p>(Proudfit, col. 8, ll. 22-30.)</p> <p>SURLYN 8940 and 9910 are both low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.</p> <p>Proudfit either incorporates by reference these chemical properties or the materials used within the Proudfit golf ball inherently have these chemical properties. For instance, Proudfit incorporates by reference U.S. Pat. No. 4,690,981 in the background of its invention. (Proudfit, col. 1, ll. 39-43.) The '981 Patent discloses the preferable amount of <b>unsaturated carboxylic acid is "from about 5[%] to about 15% by weight."</b> ('981 Patent, col. 3, ll. 59-60.) If Proudfit discloses using blends of SURLYN as the chemical for making the inner cover and the '981 Patent is the formulation for the ionomer known in the art as SURLYN, then inherently grades of SURLYN such as SURLYN 8940 and 9910 would be low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.</p>	Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Ionomer Type	Blend Ratio						
Sodium- Surlyn 8940	75%						
Zinc- Surlyn 9910	25%						



Application/Control Number: 95/000,122

Page 163

Art Unit: 3993

an outer cover layer molded about said spherical intermediate ball to form a multi-layer golf ball,

"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard Surlyns" in U.S. Patent No. 4,884,814.)" (col. 5, line 66-col. 6, line 1.)

"Specific standard Surlyn resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc) ...." (col. 6, lines 6-7.)

The composition of the inner cover layer is described in Table 6.

TABLE 6	
Composition of Inner Layer of Cover (Parts by Weight)	
Monomer Type	Blend Ratio
Sodium- Surlyn 8940	75%
Zinc- Surlyn 9910	25%

(Proudfit, col. 8, ll. 22-30.)

the outer layer comprising a non-ionomeric elastomer selected from the group consisting of polyester elastomer, polyester, polyether polyurethane and polyester amide,

"FIG 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises .... a relatively soft **outer layer** 14 of polymeric material." (Proudfit, col. 7, ll. 21-24.)

"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (Proudfit, col. 5, ll. 15-17.) An example of this blend is disclosed in Table 7 reproduced below.

TABLE 7	
Composition of Outer Layer (Parts by Weight)	
Trans Polyisoprene (TP-301)	60.00
Polybutadiene	40.00
Zinc Oxide	1.00
Titanium Dioxide	17.00
Ultramarine Blue color	.50
Zinc DiAcrylate	35.00
Peroxide (Varon 250 XL)	2.50
Total	160.00

Note that Trans PolyIsoprene is basically the chemical name for balata and Polybutadiene is one of the first types of synthetic rubber or elastomer. As described in the Rule 132 Declaration of Edmund A. Hebert in paragraph 7, the outer cover layer disclosed in Proudfit is the outer cover layer for the golf ball disclosed in Exhibit A to the Rule 132 Declaration and that **cover has a Shore D hardness of 52**. Thus, Proudfit's outer layer

Application/Control Number: 95/000,122

Page 164

Art Unit: 3993

	cover inherently has a Shore D hardness of less than 64.
said outer cover layer having a modulus in the range of about 1,000 to about 30,000 psi	“A golf ball cover in accordance with the invention includes ... an outer layer of soft material such as balata or a blend of balata and other elastomers. Preferably, the outer layer is a blend of balata and a thermally crosslinkable elastomer such as polybutadiene. <b>The balata and elastomer are crosslinked [(an indication that the material is a thermosetting material)]</b> during the molding of the ball by a crosslinker such as zinc diacrylate and a crosslinking initiator such as organic peroxide rather than using the conventional sulfur and RR2 crystals curing system for balata covers. The outer layer of the cover is completely crosslinked when the ball is removed from the mold, and subsequent processing steps can be performed in the same manner as on SURLYN covered balls.” (Proudfit, col. 5, ll. 17-27.)
and a Shore D hardness of 64 or less.	“... an outer layer of soft material such as balata or a blend of balata and other elastomers.” (col. 5, lines 15-17.) Also, see below.

As pointed out in the request on page 81 and 82:

... Proudfit teaches a golf ball having a two-piece [(sic three-piece)] cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer of a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify the soft balata outer cover layer of Proudfit to include the soft polyurethane material taught by Wu. Wu teaches that: “The problem with SURLYN®-covered golf balls, however, is that they lack the “click” and “feel” which golfers had become accustomed to with balata. “Click” is the sound when the ball is hit by a golf club and “feel” is the overall sensation imparted to the golfer when the ball is hit. It has been proposed to employ polyurethane as a cover stock for golf balls because, like SURLYN®, it has a relatively low price compared to balata and provides superior cut resistance over balata. However, unlike SURLYN®-covered golf balls, polyurethane-covered golf balls can be made to have the “click” and “feel” of balata. (Wu at col. 1, lines 36-46.) As the inventor of the ‘130 patent had indicated in a 1994 publication, golf ball designers understood that the mechanical properties of the layers impacted the performance of the golf ball more than the materials themselves. (Exhibit G at 334.) Additionally, Wu’s polyurethane material inherently has a flexural modulus of about 23,000 psi as measured in accordance with ASTM standards. (Decl. of Jeff Dalton at ¶ 7.) Proudfit’s outer cover layer material has a flexural modulus of between about 20,000 and

Application/Control Number: 95/000,122

Page 165

Art Unit: 3993

25,000 psi. (Proudfit, col. 6, lines 28-31 .) Thus, one of ordinary skill in the art would have appreciated that using Wu's polyurethane as Proudfit's outer cover layer would have provided similar playability characteristics as well as numerous advantages including, for example, durability.

Based on Wu's teachings, one of ordinary skill in the art would have recognized the substitutability of soft polyurethane for soft balata-based materials and the advantages of making such a substitution. These advantages include (1) low price compared to balata; (2) better cut resistance when compared to balata; and (3) a "click" and "feel" that is similar to balata. Moreover, the replacing the balata-material taught by Proudfit would have been obvious to those skilled in the art prior to November 9, 1995 because before that time, the Titleist Professional<sup>TM</sup> golf ball, which had used Wu's polyurethane material, had replaced balata-covered balls as the market leader. (See Exhibit C; see also Decl. of Jeffery L. Dalton at ¶¶ 3-4.)

On page 82 the request concludes with: "Therefore, it would have been obvious to one of ordinary skill in the art at the time of the alleged invention to modify Proudfit's golf ball by replacing the soft balata outer cover layer with an outer cover layer made of soft polyurethane material because polyurethane provides numerous advantages over balata while exhibiting the "click" and "feel" of balata."

This rejection of claim 6 based on Proudfit in view of Wu was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Ground 41: Patent Owner's Argument received 30 April 2007

The Patent Owner does not specifically argue this rejection, except for the Dalton Declaration. The argument is that given at "Ground 1: Patent Owner's Argument" and "Ground 21: Patent Owner's Argument," *supra*.

Application/Control Number: 95/000,122

Page 166

Art Unit: 3993

For the Dalton Declaration, the Patent Owner argues that it is not competent evidence for the value of the flexural modulus of Titleist 1 Professional golf ball (Patent Owner's Response at middle of page 29).

Ground 41: Third Party Requester's Comments received 30 May 2007

The Third Party Requester's counter arguments for this claim are the same as given *supra* at "Ground 1: Third Party Requester's Comments" and "Ground 21: Third Party Requester's Comments." Third Party Requester does not specifically argue the Dalton Declaration.

Ground 41: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner agrees with the proposed rejection of the Third Party Requester, and the rejection of claim 6 under 35 U.S.C. § 103(a) as being obvious by Proudfit in view Wu is maintained.. For the response see "Ground 1: Examiner's Response to the Argument and Comments" and "Ground 21: Examiner's Response to the Argument and Comments," *supra*. Further, Examiner considers the Dalton Declaration to be competent evidence for at least the flexural modulus value of the Titleist 1 Professional because the results given are the results of a performed test (Decl. of Dalton at para. 7).

**Proposed Third Party Requester Rejection: Ground #42.**

The requester submits on pages 82-84 in the request that claim 5 is unpatentable under 35 U.S.C. § 103 as being obvious over Proudfit in view of Molitor '751.

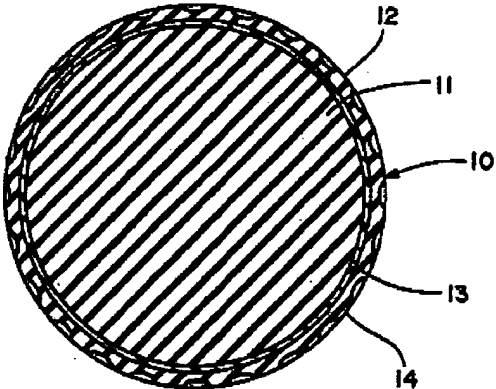
Application/Control Number: 95/000,122

Page 167

Art Unit: 3993

Claim 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Proudfit in view of Molitor '751.

Below is a claim chart identifying the claim limitations and where Proudfit discloses, teaches or suggests the claim limitations.

Claim 6	Proudfit
A multi-layer golf ball comprising:	"This invention relates to golf balls, and more particularly, to a golf ball having a two-layer cover." (col. 1, lines 11-12.)
a spherical core;	 <p>"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 [in the same of a sphere] and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material. (col. 7, lines 21-24; FIGS 1, 2.) "Two specific solid core compositions used with the new two- layer cover had the composition described in Table 1. One core was used in a golf ball which was designated as a 90 compression ball, and the other core was used in a golf ball which was designated as a 100 compression ball." (col. 7, lines 51-55.)</p>
an inner cover layer molded over said spherical core to form a spherical intermediate ball,	"FIG. 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises a relatively hard inner layer 13 of one or more ionomer resins and a relatively soft outer layer 14 of polymeric material." (col. 7, lines 21-24.)
said inner cover layer having a Shore D hardness of 60 or greater	The composition of the inner cover layer is described in Table 6.

	<p style="text-align: center;"><b>TABLE 6</b></p> <hr/> <p style="text-align: center;">Composition of Inner Layer of Cover (Parts by Weight)</p> <hr/> <table> <tr> <th style="text-align: center;">Ionomer Type</th><th style="text-align: center;">Blend Ratio</th></tr> <tr> <td style="text-align: center;">Sodium-Surlyn 8940</td><td style="text-align: center;">75%</td></tr> <tr> <td style="text-align: center;">Zinc-Surlyn 9910</td><td style="text-align: center;">25%</td></tr> </table> <hr/> <p>(Proudfit, col. 8, ll. 22-30.)</p> <p>SURLYN 8940 has a <b>Shore D hardness of 65</b>; SURLYN 9910 has a <b>Shore D hardness of 64</b>, see Exhibit I. Therefore, this cover blend has a hardness of 60 or more because materials used to make this inner layer have Shore hardness greater than 60.</p> <p>“The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core.” (Proudfit, col. 8, ll. 32-38.)</p>	Ionomer Type	Blend Ratio	Sodium-Surlyn 8940	75%	Zinc-Surlyn 9910	25%
Ionomer Type	Blend Ratio						
Sodium-Surlyn 8940	75%						
Zinc-Surlyn 9910	25%						
and comprising an ionomeric resin having no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid	<p>“The inner layer can be molded in one of two methods: 1. Injection molded over the core in a manner which is conventionally used to injection mold ionomers over a solid core. 2. Injection mold halfshells, place halfshells over the core, compression mold the inner cover over the core.” (Proudfit, col. 8, ll. 32-38.)</p>						
and having a modulus of from about 15,000 to about 70,000 psi;	<p>The composition of the inner cover layer is described in Table 6.</p> <p style="text-align: center;"><b>TABLE 6</b></p> <hr/> <p style="text-align: center;">Composition of Inner Layer of Cover (Parts by Weight)</p> <hr/> <table> <tr> <th style="text-align: center;">Ionomer Type</th><th style="text-align: center;">Blend Ratio</th></tr> <tr> <td style="text-align: center;">Sodium-Surlyn 8940</td><td style="text-align: center;">75%</td></tr> <tr> <td style="text-align: center;">Zinc-Surlyn 9910</td><td style="text-align: center;">25%</td></tr> </table> <hr/> <p>(Proudfit, col. 8, ll. 22-30.)</p> <p>SURLYN 8940 and 9910 are both low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.</p> <p>Proudfit either incorporates by reference these chemical properties or the materials used within the Proudfit golf ball inherently have these chemical properties. For</p>	Ionomer Type	Blend Ratio	Sodium-Surlyn 8940	75%	Zinc-Surlyn 9910	25%
Ionomer Type	Blend Ratio						
Sodium-Surlyn 8940	75%						
Zinc-Surlyn 9910	25%						

	<p>instance, Proudfit incorporates by reference U.S. Pat. No. 4,690,981 in the background of its invention. (Proudfit, col. 1, ll. 39-43.) The '981 Patent discloses the preferable amount of <b>unsaturated carboxylic acid is "from about 5[%] to about 15% by weight."</b> ('981 Patent, col. 3, ll. 59-60.) If Proudfit discloses using blends of SURLYN as the chemical for making the inner cover and the '981 Patent is the formulation for the ionomer known in the art as SURLYN, then inherently grades of SURLYN such as SURLYN 8940 and 9910 would be low acid ionomer resins containing no more than 16% by weight of an alpha, beta-unsaturated carboxylic acid.</p>						
<p>an outer cover layer molded about said spherical intermediate ball to form a multi-layer golf ball,</p>	<p>"The standard resins have a flexural modulus in the range of about 30,000 to about 55,000 psi as measured by ATM Method D-790. (Standard resins are referred to as "hard Surlyns" in U.S. Patent No. 4,884,814.)" (col. 5, line 66-col. 6, line 1 .)</p> <p>"Specific standard Surlyn resins which can be used in the inner layer include 8940 (sodium), 9910 (zinc) ...." (col. 6, lines 6-7.)</p> <p>The composition of the inner cover layer is described in Table 6.</p> <table border="1"> <caption>TABLE 6 Composition of Inner Layer of Cover (Parts by Weight)</caption> <tr> <th>Ionomer Type</th><th>Blend Ratio</th></tr> <tr> <td>Sodium- Surlyn 8940</td><td>75%</td></tr> <tr> <td>Zinc- Surlyn 9910</td><td>25%</td></tr> </table> <p>(Proudfit, col. 8, ll. 22-30.)</p>	Ionomer Type	Blend Ratio	Sodium- Surlyn 8940	75%	Zinc- Surlyn 9910	25%
Ionomer Type	Blend Ratio						
Sodium- Surlyn 8940	75%						
Zinc- Surlyn 9910	25%						
<p>the outer layer comprising a non-ionomeric elastomer selected from the group consisting of polyester elastomer, polyester, polyether polyurethane and polyester amide,</p>	<p>"FIG 1 illustrates a two-piece golf ball 10 which includes a solid core 11 and a cover 12 which comprises .... a relatively soft <b>outer layer 14</b> of polymeric material." (Proudfit, col. 7, ll. 21-24.)</p> <p>"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (Proudfit, col. 5, ll. 15-17.) An example of this blend is disclose in Table 7 reproduced below.</p>						

Application/Control Number: 95/000,122

Page 170

Art Unit: 3993

	<p style="text-align: center;"><b>TABLE 7</b></p> <hr/> <p style="text-align: center;">Composition of Outer Layer (Parts by Weight)</p> <hr/> <table> <tr> <td>Trans Polyisoprene (TP-301)</td><td>60.00</td></tr> <tr> <td>Polybutadiene</td><td>40.00</td></tr> <tr> <td>Zinc Oxide</td><td>5.00</td></tr> <tr> <td>Titanium Dioxide</td><td>17.00</td></tr> <tr> <td>Ultramarine Blue color</td><td>.50</td></tr> <tr> <td>Zinc DiAcrylate</td><td>35.00</td></tr> <tr> <td>Peroxide (Varox 230 XL)</td><td>2.50</td></tr> <tr> <td><b>Total</b></td><td><b>160.00</b></td></tr> </table> <hr/> <p>Note that Trans Polyisoprene is basically the chemical name for balata and Polybutadiene is one of the first types of synthetic rubber or elastomer. As described in the Rule 132 Declaration of Edmund A. Hebert in paragraph 7, the outer cover layer disclosed in Proudfit is the outer cover layer for the golf ball disclosed in Exhibit A to the Rule 132 Declaration and that <b>cover has a Shore D hardness of 52</b>. Thus, Proudfit's outer layer cover inherently has a Shore D hardness of less than 64.</p>	Trans Polyisoprene (TP-301)	60.00	Polybutadiene	40.00	Zinc Oxide	5.00	Titanium Dioxide	17.00	Ultramarine Blue color	.50	Zinc DiAcrylate	35.00	Peroxide (Varox 230 XL)	2.50	<b>Total</b>	<b>160.00</b>
Trans Polyisoprene (TP-301)	60.00																
Polybutadiene	40.00																
Zinc Oxide	5.00																
Titanium Dioxide	17.00																
Ultramarine Blue color	.50																
Zinc DiAcrylate	35.00																
Peroxide (Varox 230 XL)	2.50																
<b>Total</b>	<b>160.00</b>																
said outer cover layer having a modulus in the range of about 1,000 to about 30,000 psi	<p>"A golf ball cover in accordance with the invention includes ... an outer layer of soft material such as balata or a blend of balata and other elastomers. Preferably, the outer layer is a blend of balata and a thermally crosslinkable elastomer such as polybutadiene. <b>The balata and elastomer are crosslinked [(an indication that the material is a thermosetting material)]</b> during the molding of the ball by a crosslinker such as zinc diacrylate and a crosslinking initiator such as organic peroxide rather than using the conventional sulfur and RR2 crystals curing system for balata covers. The outer layer of the cover is completely crosslinked when the ball is removed from the mold, and subsequent processing steps can be performed in the same manner as on SURLYN covered balls." (Proudfit, col. 5, ll. 17-27.)</p>																
and a Shore D hardness of 64 or less.	<p>"... an outer layer of soft material such as balata or a blend of balata and other elastomers." (col. 5, lines 15-17.) Also, see below.</p>																

As pointed out in the request on page 82-84:

...Proudfit teaches a golf ball having a two-piece cover including a hard, ionomeric inner cover layer and a soft balata outer cover layer. While Proudfit may not disclose the use of a polyurethane material as the outer cover layer for a golf ball, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Proudfit's



Application/Control Number: 95/000,122

Page 171

Art Unit: 3993

golf ball by replacing the soft balata outer cover layer with the soft polyurethane outer cover layer taught by Molitor '751.

Molitor '751 teaches that: It has now been discovered that a key to manufacturing a two-piece ball having playability properties similar to wound, balata-covered balls is to provide about an inner resilient molded core a cover having a shore C hardness less than 85, preferably 70-80, and most preferably 72-76. The novel cover of the golf ball of the invention is made of a composition comprising a blend of (1) a thermoplastic urethane having a shore A hardness less than 95 and (2) an ionomer having a shore D hardness greater than 55. (Molitor '751, col. 2, lines 33-49.) In explaining what a "two-piece" golf ball is, the Molitor '751 patent explains that: The phrase "two piece ball" as used herein refers primarily to balls consisting of a molded core and a cover, but also includes balls having a solid layer beneath the cover as disclosed, for example, in U.S. Pat. No. 4,431,193 to Nesbitt, and Other balls having non-wound cores. (Molitor '751, col. 2, lines 7-12.)

Proudfit teaches a "two-piece" golf ball that fits within this definition. Molitor '751 explains that the advantages of using a cover layer including a soft polyurethane material on a two-piece golf ball, such as the golf ball of Proudfit, include "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)

Molitor expresses the hardness of the cover material as a Shore C hardness of less than 85, preferably 70 to 85 and most preferably 72 to 76. (Molitor '751, col. 4, lines 21-25.) Based on Callaway's own measurements, a Shore C hardness of 73 is equal to a Shore D hardness of 47. (See U.S. Patent No. 6,905,648, Table 19 (Exhibit L.) A cover material having a Shore C hardness of between 72 and 76 will inherently have a Shore D hardness of less than 64.

On pages 83-84 the request concludes: "Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to replace the soft balata outer cover layer of Proudfit with the soft outer cover layer including a soft polyurethane material as taught by Molitor '751 to provide golf balls that have "playability properties as good or better than balata-covered wound balls but are significantly more durable," and "have better wood playability properties than conventional two-piece balls, and permit experienced golfers to apply spin so as to fade or draw a shot" while having improved puttability. (Molitor '751, col. 2, lines 61-68.)"

Application/Control Number: 95/000,122

Page 172

Art Unit: 3993

This rejection of claim 6 based on Proudfit in view of Molitor '751 was proposed by the third party requester in the request for reexamination and is being adopted essentially as proposed in the request.

Ground 42: Patent Owner's Argument received 30 April 2007

The Patent Owner does not specifically argue this rejection. The argument is that given at "Ground 1: Patent Owner's Argument" and "Ground 22: Patent Owner's Argument," *supra*.

Ground 42: Third Party Requester's Comments received 30 May 2007

The Third Party Requester's counter arguments for this claim are the same as given *supra* at "Ground 1: Third Party Requester's Comments" and "Ground 22: Third Party Requester's Comments."

Ground 42: Examiner's Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner agrees with the proposed rejection of the Third Party Requester, and the rejection of claim under 35 U.S.C. § 103(a) as being obvious by Proudfit in view Molitor '751 is maintained. For the response see "Ground 1: Examiner's Response to the Argument and Comments" and "Ground 22: Examiner's Response to the Argument and Comments," *supra*.

#### Unexpected Results and Commercial Success

Patent Owner's Response received 30 April 2007

Application/Control Number: 95/000,122

Page 173

Art Unit: 3993

Besides arguing the outstanding rejections of individual claims as explained *supra*, the Patent Owner argues generally for non-obviousness of the invention based on unexpected results and commercial success (*see* Patent Owner's Response at pages 6-9). The crux of the argument is that, although the instant invention is made of individual elements known in the art, the unique combination of elements of the claimed invention results in a golf ball with excellent "distance" and "feel" (Patent Owner's Response at page 7). Consequently, golf balls within the ambit of the claimed invention (*i.e.*, the Rule 35 ball of the Patent Owner and the Pro V1 of the Third Party Requester) have great commercial success. Hence, the "[u]nexpected and overwhelming success of Mr. Sullivan's golf ball technology thus demonstrates that his invention was not simply the predictable result of combining known materials, but in fact represented the best solution even conceived for the distance-versus-control problem" (Patent Owner's Response at page 9).

Third Party Requester's Comments received 30 May 2007

The Third Party Requester comments that: (1) the Sullivan '103 patent does not disclose or suggest the Pro V1 because the Pro V1 has a construction different in several aspects (*eg.*, core size) from the ball disclosed in the Sullivan '130 patent (Third Party Requester's Comments at bottom of page 35 to middle of page 37); (2) there is no nexus between the commercial success of the Third Party Requester's Pro V1 and the Sullivan '130 patent because the Pro V1's success rests upon specific types of advertising (Third Party Requester's Comments at middle of page 38 to middle of page 40) along with different technology (Third Party Requester's Comments at middle of page 40 to middle of page 42); (3) many golf balls purport to have

Application/Control Number: 95/000,122

Page 174

Art Unit: 3993

solved the distance and “feel” problem (Third Party Requester’s Comments at middle of page 43 to 44); and, (4) even though there were other three-piece, polyurethane balls available, there was little demand for the ball on the PGA tour until shortly before the introduction of the Pro V1 (Third Party Requester’s Comments at 45).

Examiner’s Response to the Argument and Comments in the Office Action mailed 2 Nov. 2007

Examiner generally agrees with the comments of the Third Party Requester and finds the arguments of the Patent Owner of unexpected results and commercial success to be unpersuasive.

As a preliminary matter, the argument(s) presented for secondary considerations presented by the Patent Owner are not relevant to the rejections made under 35 USC 102 (*see* MPEP 2131.04). Thus only the rejections under 35 USC 103 are considered.

To show unexpected results (*i.e.*, unique and excellent combination of distance and “feel”) the Patent Owner uses testimonial-type evidence of statements, or endorsements, by well known golfers such as Arnold Palmer (Patent Owner’s Response at bottom on page 8). Examiner considers this to be opinion evidence because the statements are not accompanied by objective data. Due to this lack of objective data, the probative value of the presented opinion evidence is not sufficient to overcome the *prima facie* rejections, *supra*, maintained in this office action.

The evidence of commercial success proffered by the Patent Owner is similarly testimonial in nature (*e.g.*, “Pro V1 is the “most successful golf ball in the history of the golf

Application/Control Number: 95/000,122

Page 175

Art Unit: 3993

industry . . .” citing an article in the Golf Gazette). Again no objective data is presented as support. With no objective data, the probative value of the presented evidence is again not sufficient to overcome the *prima facie* rejections, *supra*, maintained in this office action.

As to the comments of the Third Party Requester concerning, *inter alia*, the scope of the claims of the Sullivan ‘130 patent and its nexus with the Pro V1, the Examiner did not evaluate these comments since the secondary considerations presented by the Patent Owner were not found sufficient for the reasons given immediately above.

***Patent Owner’s Arguments received 2 January 2008***

Since the Patent Owner does not argue rejections of individual claims, the arguments will be addressed by topic as given in the Response received 2 January 2008. Patent Owner argues:

(1) in litigation a district court has ruled for Callaway Golf on several validity issues and a jury has recently upheld the validity of claim 5. While not bound by the verdict, the decision is relevant and instructive and deserves consideration by the Examiner (Patent Owner’s Response at middle of page 2);

(2) the district court held that Nesbitt does not incorporate Molitor ‘637 by reference because the legal standard governing incorporation by reference is set forth in *Advanced Display Sys.* which the instant incorporation statement does not meet. The court distinguished *In re Voss* and *In re Hughes* due to the level of detail found in their incorporation statements (Patent Owner’s Response at bottom of page 2 to middle of page 5);